



GOVERNMENT OF INDIA
MINISTRY OF TOURISM AND CIVIL AVIATION
(COMMISSION OF RAILWAY SAFETY)

RAILWAY ACCIDENT INVESTIGATION REPORT

ON

**Collision of No. E-3 Down EMU 'Madras Central—Gummidipundi Passenger' Train
With a P.T.C. Bus No. TMN 1607**

at

Manned level crossing No. 10

at

Km. 13/2 between Tiruvottiyur and Ennore Stations

on

Madras-Gudur Broad Gauge Double Line Section

of

Southern Railway

on

17th October, 1980

SUMMARY

1. Date	..	..	..	..	17-10-1980
2. Time	..	..	..	..	07.00 hours
3. Railway	..	..	..	..	Southern
4. Gauge	..	..	..	..	Broad (1676 mm)
5. Location	..	..	..	..	At manned level crossing No. 10 at Km. 13/2 between Tiruvottyur and Ennore Stations on Madras-Gudur-Section of Madras Division.
6. Nature of accident	..	..	..	..	Collision
7. Train involved	..	..	..	..	(i) E-3 Down EMU 'Madras Central-Gummidipundi Suburban' Passenger train. (ii) Pallavan Transport Corporation Bus No. TMN 1607.
8. Consisting of	..	..	..	..	Two units of four coaches each.
9. Estimated speed at collision	..	..	..	..	(i) 75 Km./h. (ii) 10 Km./h.
10. System of operation	..	..	..	..	Automatic Block System
11. Number of tracks	..	..	..	..	Double Line
12. Gradient	..	..	..	..	Rising gradient of 1 in 1000
13. Alignment	..	..	..	..	Straight
14. Weather	..	..	..	..	Rainy
15. Visibility	..	..	..	..	Normal
16. Casualties	..	..	..	..	Killed—3 (Driver and two occupants of the Bus) Injured—37 (Grievous—10 Simple—27—all occupants of the Bus).
17. Cost of damage	..	..	..	..	Rs. 5,000
18. Cause	..	..	..	..	Road vehicle infringing the path of the train
19. Responsibility	..	..	..	..	(i) Gateman on duty at the level crossing (ii) Driver of the Bus (iii) Some other Railway Officials to be identified.
20. Important Recommendations in brief	1. Early replacement of the crossing by a road under-bridge to followed up. 2. Compliance of important safety instructions to be given attention to. 3. The present policy of posting Officers and Inspectors in the Safety Organisations of Railways needs a review. 4. Guide lines issued by Railway Board in their letter of 16-3-1979 in the matter of providing safety aids at level crossing to be implemented early. 5. Bell warning as a safety aid to non-interlocked level crossings to be discontinued.

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From :

The Commissioner of Railway Safety,
Southern Circle,
Bangalore.

To :

The Secretary to the Govt. of India,
Ministry of Tourism and Civil Aviation,
Sardar Patel Bhavan,
New Delhi.

Through : The Chief Commissioner of Railway Safety, Lucknow.

Sir,

In accordance with Rule 4 of the Statutory Investigation into Railway Accidents Rules, 1973 (published by the Ministry of Tourism and Civil Aviation under their Notification No. RS. 13-T (8)/71 dated 19th April 1973). I have the honour to submit the results of my inquiry into the collision between E-3 Down Electric Multiple Unit "Madras—Gummidipundi Suburban Passenger" train and Pallavan Transport Corporation Bus Fo. TMN 1607 at level crossing No. 10 at Km. 13.20 between Tiruvottiyur and Ennore Stations on Madras-Gudur Broad Gauge double line section of Southern Railway at about 07.00 hours on 17th October 1980.

1.2 Inspection and Inquiry

1.2.1. I inspected the site of accident on 21st October in company with the Chief Traffic Safety Superintendent, Chief Engineer, Chief Electrical Engineer, Divisional Railway Manager, Addl. Chief Signal and Telecommunication Engineer (Construction), Additional Chief Engineer of Madras Division and other Officers of Southern Railway. The damaged bus which was lying on the main road near the level crossing was also inspected and particulars relevant to my investigations were noted. The rake of the Suburban train was inspected on the morning of 22nd October at Madras Central station. On the same day I visited the Stanley Hospital, Royapuram, Madras, where 10 patients with grievous injuries and 3 with minor injuries were receiving medical attention.

1.2.2. A Press Notification was issued on 17th October inviting members of the public having knowledge relating to the accident to tender evidence at the Inquiry, which I commenced on 21st October at Madras or to communicate with me by post.

1.2.3 The District Magistrate, and the Police Authorities of Chengalpattu District of Tamilnadu State were duly notified.

1.2.4 The Administrative Officers present at the Inquiry, which I held in the Meeting Room of the Divisional Railway Manager's Office, at Madras on the 21st, 22nd and 23rd October and 11th November were :

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| 1. Shri V.N.Gopaladesikan, Chief Traffic Safety Superintendent | | on all days. |
| 2. ,, M.N. Prasad, Divisional Railway Manager | .. .. | do. |
| 3. ,, N.V.S. Murthy, Chief Electrical Engineer | .. .. | on 21st and for sometime on 22nd & 23rd. |
| 4. ,, S. Panchapakesan, Chief Signal and Tele-communication Engineer | .. .. | on 22nd & 23rd |
| 5. ,, K. Ramaswamy, Chief Track Engineer | .. .. | on 23rd only |
| 6. ,, M.D. David, Addl. Chief Signal Engineer | .. .. | on 21st Oct. and 11th November. |
| 7. ,, V.R. Vasudevan, Addl. Chief Engineer | .. .. | on 21st & 22nd |

Deputy Superintendent, Railway Police, Madras, was present for sometime on the 21st. Other Railway Officers were available and called in as and when required.

1.2.5. In all, evidence of 24 witnesses including six persons travelling by the ill-fated bus, its Conductor, the Traffic Superintendent of Pallavan Transport Corporation, Madras and an out-sider who was an eye witness to the occurrence was recorded and relevant exhibits filed.

NOTE : In this Report

- (i) the term "Suburban train" wherever used refers to No. E-3 Down EMU Suburban Passenger train which left Madras Central at 06.30 hours on 17-10-1980 for Gummidipundi and the terms 'bus' or 'road vehicle' refers to Pallavan Transport Corporation Bus No. TMN 1607 which left High Court bus stop at 06.00 hours along route No. 56-H for Ennore Terminal bus depot on the same morning ;
- (ii) the terms 'left' and 'right' when used with respect to the colliding vehicles are to be taken with reference to the direction in which they were moving prior to the collision ; and
- (iii) the train was moving from South to North and the bus from East to West. The gate leaves of the level crossing which when closed to road would be parallel to the track are referred to as Western (to the left of the train) and Eastern (to the right of the train).

1.2.6. E-3 Down Suburban train which left Madras Central at 06.30 hours on 17th October had a normal run upto Wimconagar halt and left that station at 06.56 hours, three minutes behind schedule. After covering nearly three kilometres between Wimconagar and Ennore—its next scheduled halt—the train collided with Pallavan Transport Corporation Bus No. TMN 1607 plying on route No. 56-H between Madras High Court and Ennore on level crossing No. 10 at Km. 13.20 at about 07.00 hours. After hitting the bus, the train came to a stop with the Motorman's cab resting 310 metres away from the level crossing. The road vehicle swerved towards its right by about 120° horizontally and fell flat on its side with its wheels facing South-East, its body lying on the Up track and also infringing the Down track. The engine of the bus which got detached from its position was found to have been thrown out on to the road-side, down the bank of the Up track about 10 metres away. The Guard, after protecting the Up track which was infringed by the road vehicle, suggested to the Motorman to take the train to Ennore and, accordingly, the train left the site after a detention of about 15 minutes and reached Ennore at 07.18 hours.

1.2.7. The speed of the Suburban train at the time of collision was about 75 Km./h. and that of the road vehicle was about 10 Km./h. The accident took place in inclement weather under near normal visibility conditions.

1.2.8 Casualties

As a result of the accident, three persons (the Driver and two passengers travelling by the bus) lost their lives and 59 persons sustained injuries of which ten had been classified as grievous, 27 as minor and 22 as trivial.

1.2.9 Passenger Occupation

The carrying capacity of the Suburban train was 808 and occupation was stated to be about 1200. The road vehicle was said to have been occupied by about 65 passengers—some of them standing at the entrance and in the corridor.

II. RELIEF MEASURES**2.1. Intimation.**

The Guard of the Suburban train informed the Station Master on duty at Ennore on arrival of the train at 07.18 hours and had also spoken to the Divisional Railway Control at Madras over telephone. A little earlier, someone from the level crossing had conveyed the information over the telephone to the Station Master who in turn had informed the local Police, the First-aid Unit of the nearby Ashok Leyland Factory and others concerned within about 15 minutes of the occurrence.

2.2. Medical Attention and Relief

2.2.1. Some of the passengers of the Suburban train who got down at the accident spot and other local public who had by then collected at the level crossing helped the injured in getting out of the vehicle. Utilising public transport vehicles and an Ambulance of the Ashok Leyland Factory which were soon made available, the injured were shifted to Stanley Hospital, Royapuram, Madras, situated at about ten kilometres from the accident site. All the injured persons were stated to have been removed from the site within about half-an-hour's time.

2.2.2. Southern Railway's Accident Relief Medical Van from Madras Central was ordered at 07.25 hours and left the station with Doctors and other medical staff at 07.52 hours reaching the site at 08.25 hours. Earlier the Assistant Divisional Medical Officer, Tondiarpet Marshalling Yard reached the site by road at 07.45 hours, by which time all the injured had already been shifted to hospital. Railway Doctors then proceeded to Stanley Hospital and co-ordinated with the hospital authorities in rendering prompt medical attention to the injured.

2.2.3. Restoration

The road vehicle which was lying on the Up track infringing both the tracks was cleared at 10.25 hours and both the lines were handed over for traffic soon thereafter. As a result of the accident, four Suburban trains had been cancelled between Tiruvottiyur and Gummidipundi and two between Madras and Gummidipundi. Long distance trains were regulated at the adjoining stations and were taken to their respective destinations after suffering detentions ranging from 45 to 220 minutes.

III. THE TRAIN

3.1 Composition of the Suburban Train

E-3 Down Suburban train comprised two units, numbered 00 and 02, each with four coaches of 1979 ICF make. These units were commissioned in April 1979 and were not overdue any maintenance schedule.

The train was provided with 'self-lapping electro-pneumatic combined with automatic' compressed air brakes with a pressure of 3.5 Kg./CM². An examination of the train after the accident indicated that the brakes were working normally and all cylinders on the formation were fully operative.

The total length of the train over buffers was 172.8 m. and its weight was 342 tonnes.

3.2. Damages

3.2.1. The right hand side of the front face of Cab No. 1 was slightly damaged and dented. Signal bell on the Guard's side was damaged and dummy sockets for the khoops coupler broken; wire mesh and look-out glass on the right side were also broken.

There was no derailment of the train and it moved on its own wheels soon after the accident.

The total cost of damages to Railway assets was estimated to be about Rs. 5,000.

3.2.2. **The Road Vehicle**—Pallavan Transport Corporation Bus No. TMN 1607 was found to have been considerably damaged. Its front portion which received a severe hit from the speeding Suburban train was completely damaged and its engine got detached from its position and was thrown out to a distance of about ten metres. As the vehicle swerved to its right, its rear portion appeared to have infringed the path of the moving train with the result that it had also got a hit and had been damaged to some extent.

IV. LOCAL FEATURES

4.1. Description of the site

4.1.1. The collision took place on manned level crossing No. 10 at km. 13.20 between Tiruvottiyur and Ennore stations. The alignment on both the approaches of the level crossing is on straight with a gentle rising gradient of 1 in 1000 towards Ennore.

4.1.2. The section between Tiruvottiyur and Ennore is seven Kilometres long. In between, there is a halt station named Wimconagar, 2.5 Kilometres from Tiruvottiyur. All these three stations are scheduled halts for the Suburban train, which was involved in the accident.

4.1.3. The accident took place in Chengalpattu District of Tamilnadu, its location being about 13 kilometres from Madras Central station. Several Industries like Ashok leyland, Ennore Foundries, Selcrit Concrete Plant, EID Parry and Ennore Thermal Station are Located in the vicinity.

4.1.4. The general direction of the Railway line between Tiruvottiyur and Ennore is South to North and is situated parallel to and not far from the Bay of Bengal.

4.1.5. The accident took place on Madras-Gudur Broad Gauge double line section of Southern Railway. The track consists of 90-R rails, 13 metres long, welded into panels of three rails each on wooden sleepers laid to a density of M+7 on the Up line and M+4 on the Down line over 24 cms. of stone ballast.

4.1.6. The kilometrage of various locations mentioned in the Report reckoned from Madras Central/Madras Beach is as under :

Madras Central	00.00
Tiruvottiyur	7.81
Wimconagar	10.31
Level Crossing No. 10	13.20
Ennore	14.88
Gummidipundi	46.08
Gudur	136.04

4.2. Method of Working

4.2.1. The section between Madras Central and Ennore is worked under the Automatic Block System of train working, the authority for a train to enter any Automatic Block section and the speed at which it could run in the section being the aspect displayed by the signal at its entry. The aspects of colour light signals marked 90, 106(AG) and 120(A) between Tiruvottiyur and Ennore govern the entry of Down trains on to the Block sections controlled by them. The level crossing is situated in the Automatic Block section governed by Automatic Signal No. 120(A) located at

a distance of 1160 metres from it. This method of working terminates at the Home Signal No. ENR 1 of Ennore for Down trains and commences from the Up last Stop Signal of Ennore for UP trains. These two signals governing entry into and despatch from Ennore are under the control of the Station Master, Ennore.

4.2.2. Level crossing No. 10 located between Overhead Equipment masts 13/6 and 13/8 between Tiruvottiyur and Ennore is a non-interlocked 'C' Class level crossing, manned by three Gatemen on continuous shift duties. Entry of road traffic onto the crossing is controlled by 5.5 metre long (18'-0") single leaf swing type gate leaves moving horizontally across the road to be manually moved by the Gateman everytime he closes or opens the gates for road traffic.

4.2.3. The traffic handled at the level crossing comprises predominantly buses, lorries and cars. As per the census taken during the last week of October 1980, the average number of road vehicle units passing through the level crossing in a period of twenty four hours aggregated to 1676 and trains to 80, working out to a traffic density of 1, 1,34,080 train vehicle units.

4.2.4. The normal position of gates, as per the Working Instructions, is "closed to road", requiring the Gateman to open the gates for passing road traffic when he finds it safe to do so. With an average flow of 1.16 road vehicles per minute or a peak figure of 1.74 and a train every 18 minutes on an average, it is apparent that this method of passing road traffic is not workable and in practice it is functioning as a gate normally "open to road" and being closed only for passage of trains.

4.2.5. The level crossing gate is not interlocked with signals and the only aid provided to the Gateman is a bell warning system and to the road user red traffic signals on both approaches. These signals are actuated a short time before a train is due to pass the level crossing. In the Down direction, the warning is initiated by an approaching train occupying the approach track circuit at a distance of 4216 metres. In the Up direction, the warning is initiated on clearing of despatch signals for a train from Ennore or on clearing of shunt signals located at a distance of 1140 metres from the level crossing in case of shunting on the Up Main line. The Gateman is required to close or open the gates for road traffic based on the indication given by the bell, which continues to ring till after the train passes the level crossing. In addition, he is also connected to the Station Master, Ennore, by a magnetic telephone. The instrument is not, however, normally used for intimating the movement of trains.

4.2.6. For a road vehicle approaching the level crossing from the Eastern side (as was the case of the ill-fated bus) visibility is available for a length of 615 metres from a distance of 15 metres from the centre line of the nearest track in respect of Down trains and for a length of 810 metres in respect of Up trains. While a road vehicle is moving between 27 metres and 20 metres from the level crossing, the view of its Driver for an approaching Down train is obstructed by shrubs located in his line of vision. On either side of this range (of 20 to 27 metres) his view is clear for over 600 metres or more. Where the view is obstructed by shrubs, visibility available to him is restricted to not more than 150 metres. Similar is the position of visibility to a train Driver approaching the crossing from Madras side. An approaching road vehicle from the East gets hidden by the bushes and comes into his view only when it is at a distance of less than 20 metres from the centre line of the Up track.

NOTE : The method of working of the level crossing as detailed in paras 4.2.2. to 4.2.6 was as on the day of the accident and for about a month there after. The level crossing has since been reclassified "Special Class" and interlocked with signals with provision of 8 metre lifting barriers.

V. SUMMARY OF EVIDENCE

5.1.1. **Shri R. Monteen, Motorman of the Suburban train**, said that his train left Wimconagar at 06-56 hours and picked up a speed of about 65-70 km/h. Gate signal No. 106 (controlling another level crossing) displayed clear aspect, the next Automatic Signal No. 120 'attention' aspect and Ennore Home Signal No. 1 'Caution' aspect. The train was running approximately at 70 km./h. while approaching the level crossing and he noticed the bus entering the level crossing when his cab was about 60 metres away from it. It was raining at that time and both the doors of his cab were closed and shutters were up. Immediately after sighting the bus, he released the Master Controller and the emergency brakes got applied even before he reached the crossing but collision became inevitable and the right side of the EMU hit the front portion of the bus. After the collision, his train stopped after covering 310 metres from the level crossing. He came out of the cab and walked some distance towards the level crossing but in view of a crowd having collected there, he thought it prudent not to proceed further. Accordingly, he went back to the cab and after a detention of about 15 minutes, worked the train to Ennore in consultation with the Guard.

5.1.2. Answering questions, the witness said that (i) his brake system was working satisfactorily and he was able to stop the train at all scheduled stops normally without any difficulty and (ii) he noticed the right side gate leaf of the crossing (Eastern) open for road traffic but did not look out for the position of the left side gate leaf as his attention was concentrated on to his right from where the vehicle was entering.

5.2.1. **Shri B. Venkatanarasu, Guard of the Suburban train**, corroborated the statement of the Motorman about the speed of his train and the time at which it left Wimconagar. At 07-00 hours, while approaching the level crossing, he felt sudden application of brakes by the motorman. As he was looking out of the left window (Western side) to know the cause of the brake application, he noticed that the gate leaf on that side was open. As his Cab passed the crossing, his compartment received a bump on his right side and the train came to a stop with his Cab at OHE mast 13/12. He came out of the train, quickly surveyed the situation and as the bus was infringing the Up track, proceeded to protect

it first with detonators. Thereafter, he proceeded towards the driving Cab inquiring of the passengers for any injuries sustained by them but none was injured. He met the Motorman on his way towards the Cab and in consultation with him decided to work the train away from the site in view of a crowd gathering at the crossing. When the train reached Ennore at 07-18 hours, he informed the Assistant Station Master on duty about the accident and spoke to the Controller also to arrange for a Medical Van to be moved to the site.

5.2.2. Answering questions, the witness said that (i) sensing the agitated mood of crowds in such situations he did not think it to be prudent to remain at site and find out in detail what the casualties were; and (ii) he did not look for the position of the gate leaf on the Eastern side.

5.3.1. Shri A. Marudu, who works with a contractor at Ennore Thermal Power Station and who claimed to be an eye witness to the accident said that on his way back from night duty he stopped at the crossing along with two of his colleagues. It was drizzling and they took shelter just outside the gate lodge. The gates were open for road traffic at that time. One of his colleagues sighted the approaching train from Madras side and went inside the gate lodge to inform the Gateman. The Gateman came out and wanted to close the gates but by that time the train reached the crossing and collided with a bus which was then crossing the track. He and his colleagues rushed out to help the Driver who was in great pain and was frothing. Soon another bus arrived from Madras side and the injured were taken to the hospital by that vehicle. The witness left the site after about an hour.

5.3.2. Answering questions, the witness gave the following further details :

- (i) He was at the gate for about 3-4 minutes before the accident took place.
- (ii) The bell was not ringing when his friend sighted the train and went inside the gate lodge to inform the Gateman.
- (iii) No Up train passed while he was there.
- (iv) While he was approaching the crossing 2-3 road vehicles passed but none thereafter while he was there and prior to the collision.
- (v) The accident took place as the Gateman had come out of the gate lodge and not crossed even the Up track.
- (vi) He (the witness) frequently passes through the gate and knows that when a train is expected, a bell rings first before the train is sighted; and
- (vii) the bus climbed the gradient on to the crossing at a slow speed and after crossing the first track it stopped. It appeared to him that the Driver wanted to back the bus but before he could do anything, it was hit by the train.

5.4.1. Shri B. Narasimhan, Conductor of the Bus, said that right from the time the bus left High Court stop (starting point) at 06-00 hours it was raining. The bus was fully occupied and when it approached the crossing, there were about 60 passengers in it. He was standing near the Conductor's seat at the rear entrance when the accident took place. The bus approached the crossing at a slow speed and was hit by the train while it was in motion. He fell flat on the floor and sustained an internal injury. He had, however, managed to come out of the bus and was put on an Auto-rickshaw which was standing at the gate and taken to Ennore Bus Terminus from where he was shifted to Stanley Hospital.

5.4.2. Answering questions, the witness said that (i) he was in a dazed condition soon after the collision. He himself walked upto the Auto-rickshaw which was standing outside the Western gate of the level crossing with the help of some other persons (ii) he was not in a position to recollect whether the West side gate was open or not; (iii) just before the accident, he did not hear any shouts from the passengers; (iv) prior to approaching the level crossing his bus stopped at the bus stop located just ahead of the junction between Ennore High Road and the level crossing approach road, where 4 passengers got down and 10 got in. He was still in the process of issuing tickets when the collision occurred; (v) he did not observe if any road vehicles were ahead of his bus while approaching the crossing or if his bus had overtaken any standing vehicles; and (vi) the bus was still moving when the collision took place.

5.5. Shri M. Paramaswaran, a passenger of the bus, said that the bus was moving slowly when it was hit by the train. As it was approaching the Ennore gate, some one who was near the entrance shouted that a train was approaching. He did not hear any bell as the bus entered the gate.

5.6.1. Shri V.M. Vaidyanathan, Executive, Commercial Department, Ennore Foundry, another passenger of the bus, said that as the bus took a turn from the main road to cross the railway track and proceeded for some distance, there was a hue and cry from passengers. As the witness looked out to know what it was about, there was a bang and the bus got lifted slightly, turned towards the right, received another bang, tilted, travelled for some distance and fell on its side. The witness came out of the bus and went round to have a talk with the Gateman but he could not be located. When he looked at the Western gate within about 1½ to 2 minutes after the collision, he found it in closed position. There were not vehicles on the other side of the gate waiting to cross the track.

5.6.2. Answering questions, the witness gave the following further informations :

- (i) The bus stopped at the halt on Ennore High road a little before it was to divert on to the level crossing approach road.

- (ii) Once it restarted from that stop it continued to move till the collision had taken place.
- (iii) He was not in a position to recall whether the bus had overtaken any standing vehicles before entering the level crossing.
- (iv) During mornings and evenings when buses are stopped short of the crossing for passage of trains, a good number of vehicles accumulate. His observation was that after the accident, the gates were being closed for longer periods and accumulation of road vehicles was more than what it used to be earlier.

5.7.1. **Shri T.S. Ramaswamy** of the Automobile Engineering Department of Ashok Leyland Factory, who was also a passenger of the bus, said that he was standing just behind the Driver in the central corridor of the bus. He noticed the Eastern gate in open condition while the bus entered the crossing and the Western gate was in closed position. The bus was moving slowly and when it was nearing the first track some one was shouting about the approaching train and the collision took place. He became unconscious and when he regained consciousness, he was in the hospital.

5.7.2. Answering questions, the witness stated further as under :

- (i) There was a bus stop near the junction of the High-road and the level crossing approach road but he was not in a position to recollect if any passengers had got down on that day at that stop.
- (ii) When the bus turned on to the approach road he noticed that both the gates of the level crossing were in open position and ahead of the bus there were some vehicles approaching the crossing. Those vehicles had crossed on to the other side and the Gateman was asking the bus to stop and by that time he (the Gateman) had also closed the Western gate. The bus driver did not obey the signals of the Gateman, increased the speed and entered the crossing.
- (iii) No vehicles were proceeding in the opposite direction as his bus was approaching the crossing; and
- (iv) The bus had entered the crossing, crossed one of the tracks and then had stopped. It was then that it got hit.

5.8. **Shri B. Jamaluddin**, Assistant Engineer, Ennore Thermal station, another passenger of the bus, said that he was standing by the side of the third seat from the front entrance holding on to a strap. The bus came to a stop in the approach of the level crossing and waited there for some time for the passage of an Express train. After that, the gates were opened and vehicles from the other side crossed the track and then the vehicles from the Eastern side started moving. His bus was going at the back of one of or two vehicles. As the Driver had picked up speed and was passing the first track, some passenger shouted about the approaching train. The witness also saw the train when it was very close. At that time the Eastern gate was in open condition but he did not pay attention to the Western gate as his attention was on the train. Somebody was at that gate but the witness was not sure whether that person was closing or opening the gate. After the accident, he became unconscious and regained consciousness in the hospital only.

5.9. **Shri A. Bhaskaran**, another passenger of the bus, stated that he had his seat facing the Driver (a seat parallel to the body of the bus near the front entrance with the engine separating the seat from the Driver's seat). While the bus was negotiating the turn towards the level crossing it did not stop but was running at normal speed. From the opposite direction no vehicle was coming. When it entered the crossing, the bus was going in the rear of a lorry. After the bus had entered the crossing and crossed the first track, almost all passengers shouted that a train was coming. The witness had also seen the train.

5.10. **Shri K. A. Narayanan**, Assistant Station Master, Ennore, made the following points in his evidence.

- (i) At 06-45 hours he received 'out' report for Up Pooja Special from Minjur. After exchanging a Private Number with the Assistant Station Master, Tiruvottiyur, he cleared the Home and Starter signals at 06-46 hrs.
- (ii) At 06-53 hours he exchanged Private Numbers for E-3 Down Suburban train with Assistant Station Master, Tiruvottiyur. He heard the buzzer indicating the train entering the approach track at 07-00 hours.
- (iii) At 07-10 hours some one from the level crossing informed him on telephone about the accident. At 07-20 hours the Suburban train arrived at the station. By that time the Gateman also arrived and informed him of the accident.
- (iv) There were occasional reports of failure of the bell and the light (relating to the level crossing) from the Gateman of the crossing. During his duty hours the frequency of such reports was 4-5 in a month for the bell. One or two power failures also take place every day and on such occasions the bell also fails.

5.11. **Shri P. Subramani**, who had been working as a Gateman at the level crossing for about four years prior to the accident, made the following points in his deposition.

- (i) The functioning of the bell is erratic; on certain occasions it starts ringing and after the gate is closed it stops on its own resulting in demands from the road traffic drivers to open the gate.
- (ii) The width of the gate is not adequate for vehicles to cross. When the gate is opened, vehicles from both directions come on to the crossing and jam it. This leads to arguments.

- (iii) During rush hours, the vehicles do not stop (while crossing the gate) and gates have to be closed forcibly (when required to be closed for passage of trains). Some times this leads to arguments.

5.12.1. **Shri E. Dorairaj, Gangman.** Who was performing the duties of Gateman at the time of accident, said that he reported for duty with his Gang at 07-30 hours on the 16th. After working for some time, he was directed by his Mate to work at Gate No. 10 in place of a person who was to work from 11.00 hours. Accordingly, he worked at the Gate from 11.00 to 21.00 hours but none came to relieve him at 21.00 hours. He had, accordingly, to continue to work at the Gate for the whole night.

In the morning after the Mail and some other trains passed, he heard the bell again for a train from Madras side. He proceeded to close the Gate but at that time some lorries were crossing. After passing them, he closed the Western gate and proceeded towards the Eastern side. He signalled to some lorries approaching from that side to stop and they obeyed. But a bus, which was following the lorries, did not listen to his signal, overtook the lorries entered the crossing at great speed and stalled after crossing the Up track. At that time, the train was also approaching and there was a collision between the two. Before the collision, the Driver of the bus tried to back the vehicle but was unable to do that. The bus fell on its side and several people were injured.

As the crowd was shouting for the Gateman to be beaten, the witness became nervous and left the spot. He proceeded straight to Ennore station and reported the incident to the Station Master. He then took shelter in the station room till about 11.30 hours when a Doctor came and took a sample of his blood. He was then taken to Egmore and medically examined.

5.12.2. Answering questions, the witness gave the following clarifications :

- (i) After the passage of Up Pooja Special, the bell went off and he opened the gates and allowed road traffic to pass. The accumulated traffic had been cleared and vehicles were moving freely.
- (ii) After 5-6 minutes, the bell started ringing again. He went on to the Western side, allowed the traffic that was coming from that side and then closed the Western gate.
- (iii) When he was coming towards the Eastern side, the bus was seen overtaking two or three other vehicles and entered the track at great speed.
- (iv) He showed his hands signalling to the Driver of the bus to stop but he came on to the crossing, and suddenly stopped obstructing the Down track.
- (v) The bell rang for 3 to 4 minutes before the train came on to the crossings and collided with the bus.
- (vi) He was not able to close the gates as soon as the bell started ringing as vehicles were passing one after the other and he allowed them before closing the Western gate.
- (vii) When he closed the Western side gate, the train was about 3-4 masts length (180—240 metres) from him.
- (viii) The duration of the ringing of the bell for the Down Suburban train was normal when compared to other similar trains.
- (ix) When the bell rang for the Suburban train, he was outside the gate lodge watching for trains. After the Up train passed, he did not go into the gate lodge at all. He was on the track only.
- (x) He worked at the Gate 10-15 times as a substitute. The bell at the gate functions erratically. Some times it starts ringing and in the middle it stops. Sometimes it does not ring at all. On the 17th October, it continued to ring (for the Suburban train) even after the bus had entered the level crossing but it stopped after the train came to a stop.

5.13. **Shri A. Dhandapani, Permanent Way Inspector, Tiruvottiyur,** gave the following details in his deposition :

- (i) Normally, he picks up willing men from Gangs to work as substitutes at Gates when occasions arise. Such men are medically tested for the category of Gatemen. As there were no men declared in A-3 category in Gang No. 4, he was sometimes obliged to depute a man with B-1 authorisation to work as a substitute at the Gate. He was not aware of the arrangement made by his Mate on 16th October to depute Shri Dorairaj to work at the Gate.
- (ii) There had been occasional complaints from the Gateman of level crossing No. 10 about the functioning of the bell.
- (iii) In May 1977 his predecessor had written to the Divisional Safety Officer and the Sr. Divisional Engineer recommending interlocking arrangements for the Gate.
- (iv) A local arrangement was made by his predecessor in January 1978 augmenting the strength of Gatemen from two to three by posting a third man. After the witness joined the post in July 1978, he had made out a case for regularising the arrangement and got it sanctioned.
- (v) He had taken a census of road traffic at the Gate in April 1979. As per the census, 1948 road vehicles on an average were using the Gate everyday. The width of 18' (5.5 metres) of the gate would not permit heavy vehicles to cross. He felt that it should be changed to 24' (7.32 metres) with 30 feet (9.15 m.) check rails.
- (vi) According to the witness, more than 14000 train vehicle units would justify upgradation of a level crossing to 'A' Class.

5.14. **Shri K. S. Krishna Murthy, Signal Inspector, Pooneri,** said that the bell arrangement at the Gate was reliable and he had not received complaints during his three months tenure in the section.

5.15. **Shri C. Tharanathan, Divisional Safety Officer, Madras Division,** answering questions, gave the following information :

- (i) There was no special machinery in the Safety Branch of the Division to review pending cases of accidents in respect of which suggestions or recommendations had been made by the Inquiry Committees but the files concerned were not closed till the required action had been taken by the Departments concerned.
- (ii) The witness gave details of the various stages (as available on his office file) in processing the suggestion for provision of interlocking arrangements at the Gate made by the Departmental Committee which enquired into the accident of 21-1-1980.
- (iii) The letter of the Permanent Way Inspector, Tiruvottiyur, in May 1977 recommending provision of interlocking the Gate with signals was passed on by his office to the Sr. Divisional Engineer. There was nothing on his office file to show if the matter had been followed up with the Senior Divisional Engineer.

5.16. **Shri K. S. Kanakasabhapathi, Sr. Divisional Signal and Telecommunication Engineer/B, Madras Division,** answering questions, gave the following details:

- (i) Follow up action on the suggestion made by the Departmental Enquiry Committee to provide interlocking arrangements at the Gate was initiated by his Branch on 28-2-1980 when a Permanent Way Plan was called for from the Engineering Branch. The Plan was not received till August 1980. By that time the proposal had been taken up directly by the Construction wing of the Signal and Telecommunication Department at Headquarters and no further action was taken in the matter by the Division.
- (ii) The witness was of the opinion that the reliability of the bell arrangement at the crossing was good as the possibility of failure of two bells at a time (one for each direction) was remote.
- (iii) It is possible that erratic functioning of the bell arrangement complained by the Gatemen of the Crossing could have happened. (The witness then detailed the possible causes for such failure).
- (iv) The equipment at the Gate was tested soon after the accident and was found to be working alright.

5.17 **Shri V.R. Vasudevan, Additional Chief Engineer, Madras Divisions (who was Member of the Departmental Enquiry Committee which enquired into the accident of 21-1-1980 in his earlier capacity as Sr. Divisional Engineer)** answering questions gave the following information :

- (i) In respect of the recommendation of the Permanent Way Inspector, Tiruvottiyuru, in May 1977, for provision of interlocking of the Gate with signals, no followup action was taken by his office except for approval of the third man for manning the Gate.
- (ii) Railway Board's letter of 16-3-1979 containing guidelines for upgrading level crossings and provision of safety features was received in his Branch but there was no information on his file as to any data being collected with specific reference to that letter.
- (iii) Pursuant to the recommendations of the Departmental Committee (of which he was the President) which enquired into the accident of 21-1-1980, a request was made by him to the Chief Engineer's office to arrange for the supply of lifting barriers for some level crossings on the Divisions including level crossing No. 10 as distribution of the barriers was controlled from Headquarters. Later, a priority statement was also sent in May 1980 wherein priority No. 1 was given to the level crossing in question. The lifting barrier was received on 18-10-1980 (a day after the accident).

NOTE : The barrier which had been received was not the one meant for the level crossing in question. A barrier meant for another crossing on the Division was diverted.

5.18. **Shri M. D. David, Additional Chief Signal Engineer,** answering questions, gave the following details. :

- (i) Railway Board's circular of 16-3-1979 containing comprehensive instructions for level crossings was endorsed by his office to the Divisions on 20-4-1979 for necessary action.
- (ii) Divisions were asked in a letter issued on 20-5-1980 to advise the action taken. A reply was received from Palghat Division only but with incomplete information.
- (iii) Civil Engineering Department at Headquarters was associated with the implementation of Railway Board's Circular of 16-3-1979 when a meeting was convened by the Safety Branch in June 1980. As a result of the discussion, a reply was sent to Railway Board in September 1980.

5.19. **Shri C. Balasubramanian, Additional Chief Engineer, Southern Railway,** answering questions, gave the following details:

- (i) Railway Board's Circular of 16-3-1979 was dealt by the Signal Branch and his Branch, had no official information about it.
- (ii) On the issue as to whether any census was taken at level crossings coming under the purview of Railway Board's letter of 16-3-1979, his office had no specific information.

VI. OBSERVATIONS AND TESTS

6.1. On 21st October, I inspected the level crossing and the surroundings and spent about an hour there. The following observations were made during that visit.

- (1) The road approaches of the level crossing were in a neglected state of maintenance. There were no road signs at all; the gradients on both sides were rather steep. The road structure did not at all appear to be suitable for a road handling such heavy traffic—nearly 1700 vehicles comprising buses, lorries, cars, etc every 24 hours. The road surface was full of pot holes and ditches with stone metal stacked close to the narrow metalled portion of the road.
- (2) The level crossing consisted of single leaf swing gates of 5.5 metres (18'.0") width with 7.3 metres (24".0") check rails. Each of the gates was required to be handled independently to close or open the same.
- (3) There was no proper gate lodge at all, except an improvised hut. The level crossing was supposed to be working (as per the Working Instructions) with the normal position of gates "closed to road". It was seen that in practice it was working with the normal position of gates "open to road" and was being closed only for passage of trains.
- (4) During the time I spent at the level crossing, the gate leaves had to be closed 3 or 4 times for passage of trains. On one such occasion when the time of closure was long (about 10 to 12 minutes) a large number of buses and lorries lined up on either approach and after the gates were opened there was a near stampede on the track with vehicles approaching from both sides and not being able to cross due to inadequate width inside the crossing. This led to arguments also among the vehicle Drivers causing utmost confusion.
- (5) As per design of the bell warning system, when an approaching Down train enters the track circuit at a distance of 4200 metres, a red light burns and a bell starts ringing. The red light (one on each side of the gate) was noticed to have been focussed correctly to the approaching road vehicles when trains passed during my visit but due to day light its effectiveness was rather little.
- (6) While I was near the gate lodge the bell started ringing and after a couple of minutes it stopped on its own and restarted after a while. Inquiries with the Station Master, Ennore, did not indicate any power failure warranting stoppage of the bell. (The power supply for the bell and light arrangement at the gate is the same as that of Emore station, signals, panel instrument, etc.) The audibility of the bell appeared to be reducing as it continued to ring for some minutes.
- (7) While observing the working of the relays at the nearby relay box, a similar experience of the bell ringing and again stopping for no apparent reason was noticed. (The Signal Engineer explained that it could be due to, among many other reasons, the track circuit being short circuited by permanent Way men with their tools unwittingly or outsiders purposefully or for mischief).
- (8) The track approaches to the level crossing are straight and the road is practically at right angles to the tracks. For a road vehicle approaching the level crossing from the Eastern side (as the ill-fated bus had approached) the view of a Down train approaching from its left side gets hidden due to bushes and trees in the line of sight between 20 metres and 27 metres from the centre line of the nearest (Up) track, as seen from the Driver's seat of a similar vehicle. In that range, the visibility was about 150 metres only; but beyond that range (of 20 metres and 27 metres) the view was clear for more than 600 metres.

6.2. The damaged bus which was lying on the Ennore High Road, a little away from the level crossing was inspected, during the same visit. It appeared from the damages suffered by the bus that its front portion had been infringing the path of the train by about a metre and that it had received a hit on the front left corner bending the front portion of the frame and ripping open the engine, which was found thrown out about ten metres away. There were damages in the rear right corner of the bus indicating that the bus had slightly moved forward and swerved to the right with the first hit and in its subsequent position, the rear right corner which had been infringing the path of the train got a hit and the bus fell on its side with the wheels facing the Up track.

6.3. The damage marks on the front right corner of the EMU which I inspected on 22nd October tallied with the damage marks on the bus indicating that only its front portion had been infringing the path of the train.

6.4. On 22nd October, I travelled by the Suburban train which left Madras Central at 06-30 hours (a scheduled train to the same timings as the one involved in the accident on 17-10-1980) and observed its running, particularly between Wimconagar and the level crossing. An emergency brake test was conducted with the Master Controller being released at a distance of 50 metres from the Crossing. The train came to a stop after covering about 281 metres (231 metres after passing the level crossing). The speed from which it was braked during the test was 72 Km./h.

VII. DISCUSSION

7.1. Time of Accident

As per the statement of the Guard, corroborated by the Motorman, the train left Wimconagar at 06.-56 hours. Its normal running time between Wimconagar and Ennore, a distance of 4.5 kms, was five minutes. The level crossing being situated at a distance of 2.9 kilometres from Wimconagar and 1.6 kms. from Ennore, it appears reasonable that it had taken nearly four minutes to cover that distance. Accordingly, I accept the Guard's statement that the collision took place at 07-00 hours.

7.2. Speed of the colliding vehicles

7.2.1. The Motorman stated that his train was running at a speed of about 70 km./h. at the time of collision. According to him, Suburban trains have to maintain a speed of 65-70 km./h. to be able to cover the section between Wimconagar and Ennore within the booked time of five minutes. After hitting the road vehicle the train came to a stop within a distance of 310 metres. This is higher than the emergency braking distance of 231 metres which was obtained for a speed of 72km./h. during the test I conducted with a similar train on 22nd October. However in consideration of the fact that the Motorman might have taken a few seconds to react to the situation before he applied the brakes after sighting the road vehicle, I assess the speed of the train at the time of collision to be about 75km./h.

7.2.2. About the speed of the road vehicle, there are different versions by different witnesses. According to the Conductor of the bus, the vehicle had entered the crossing at a slow speed and was on the move at the time of collision. According to the Gateman, however, the bus entered the crossing at high speed. An eye witness (who was at that time taking shelter at the level crossing) and several passengers of the bus who deposed before me stated that the bus had approached the level crossing at a slow speed. Further, the approach road to the crossing was in a neglected state of maintenance with pot holes and disturbed road bed and the bus had also to negotiate a gradient of 1 in 33 while entering the crossing. I consider that under these conditions it could not have been moving forward at high speed. It was, perhaps, moving at a speed of around 10 km./h. before it was hit by the train. Whether it was moving forward or had stopped at the moment of collision, will be discussed at a later stage of the report (para 7.3.7).

7.3. Events leading to the accident

7.3.1. According to the Gateman, when the bell announcing the approach of a Down train started ringing, he proceeded to close the gate. After allowing some vehicles to cross the gate from West to East, he closed the western gate and before he could close the eastern gate, the bus entered the crossing from the East at a high speed despite his warning to the Driver not to enter and stalled after crossing the Up track. The train had by then reached the crossing and there was a collision between the two.

7.3.2. The following issues which arise out of the Gateman's statement require scrutiny :

- (i) What time interval was available to him to close the gates, after the bell announcing the approach of the Down train started ringing?
- (ii) Where was he physically positioned when the bell started ringing?
- (iii) What was the condition of road traffic at that time?
- (iv) What were the circumstances under which he could not close both the leaves of the gate fully in time? Did he actually close the western gate leaf?
- (v) Did the bus stall after crossing the Up track? Or was it forced to stop because of the western gate leaf being in close position?

7.3.3. I proceed to discuss these issues, one by one, in the following paragraphs :

7.3.3.1 What time interval was available to the Gateman to close the gate, after the bell announcing the approach of the Down train started ringing ?

As per the design of the bell arrangement for the gate, it gets actuated when a Down train touches the track circuit at a distance of about 4200 metres away from the crossing. To cover that distance, a Suburban train, which also stops at the intervening halt at Wimconagar, takes at least five minutes. The Gateman has in his deposition confirmed that the bell was functioning normally at that time although he said that it had rung for 3-4 minutes only before the train actually reached the crossing. I consider that this small discrepancy of time was due to his approximate estimation only and not due to any defect in the arrangement.

7.3.3.2. An eye witness, Shri A. Marudu (witness No. 3) said in his deposition that the bell did not ring at all and it was only when the train was sighted that a colleague of his had gone inside the gate lodge to inform the Gateman. It is difficult to understand why the Gateman would have accepted its normal functioning if the bell had not started ringing for the Suburban train. If this were true, it would have been a good defence for him not to have been able to perform his duty properly. The fact that he had not taken any such plea would lead me to believe that the eye witness was either inattentive or was not telling me the truth for some reason. I, accordingly, reject the version of Shri A. Marudu on this issue and hold that the bell had started ringing when the train touched the track circuit at the specified location and continued to ring till it passed the crossing and stopped after hitting the bus, as deposed by the Gateman, thus giving him a time interval of not less than five minutes to close the gate.

7.3.4. Where was the Gateman physically positioned when the bell started ringing?

7.3.4.1. The Gateman deposed that when the bell started ringing for the Suburban train he was outside the gate lodge passing road traffic but the eye witness referred to in para 7.3.3.2 above maintains that he had to be called out of the gate lodge. To resolve this variation in evidence, I have to resort to circumstantial evidence which is discussed in paras 7.3.4.2 to 7.3.4.4.

7.3.4.2. Earlier that morning, an Up Pooja Special train ran through Ennore at 06-53 hours as per records of that station and Control Chart at the Divisional Office. It must have passed the level crossing (located at a distance of about 1.5 kms. away) after about a minute i.e., at 06-54 hours. As per the design of the bell arrangements, it must have started ringing at about 06-46 hours when the last Stop Signal of Ennore had been cleared for the train. The Gateman in his deposition stated that he closed the gate leaves when the bell started ringing and then only after the passage of the train to permit the accumulated road traffic to be cleared. While, as per the Station-records and Control Chart, as also the evidence of the crew of the Suburban train, there was only a short gap of about a minute between the passage of Up Pooja Special at the level crossing and the touching of the approach track by the Down Suburban train, the Gateman claims to have had 5-6 minutes as the intervening period. I rely on the station records and Control Chart and reject the deposition of the Gateman on this issue.

7.3.4.3. The level crossing is busy during morning hours with several buses, lorries and cars proceeding to the nearby factories. From the road census statistics made available by the Railway Administration, the average hourly traffic between 6 and 7 hours and between 7 and 8 hours is of the order of 53 and 80 vehicles respectively, working out to a little over one vehicle per minute. Since 7 A.M. is stated to be the time when several of the factories commence their morning shift, I take that the accumulation between 06-46 and 06-54 hours could be 1.5 times the average or about 13 vehicles for the entire period of detention. In view of this and also in view of the constraints at the level crossing, viz. no facility for heavy road vehicles from opposite directions to cross on the level crossing proper, necessitating movement of vehicles one way at a time, and the poorly maintained road approaches, I hold that it would not have been possible for the Gateman to have cleared the accumulated traffic within the available one minute and that he had taken the liberty of allowing the traffic to clear fully even after the bell started ringing for the Down train. Observations made at the crossing would indicate that 13 vehicles might have cleared in 2-3 minutes time depending on the actual disposition of traffic at that movement.

7.3.4.4. The Gateman stated in reply to questions put to him that all the accumulated road traffic which was waiting for the passage of the Up Pooja Special had been fully cleared and that flow of traffic from both directions became free. This being an important circumstantial factor, I conclude that the Gateman could not have gone inside the gate lodge at any moment after the passage of the Up Pooja Special and till the collision had taken place in the face of the ringing bell indicating the approach of a train and reject the evidence of Shri A. Marudu on this point.

7.3.5. What was the condition of road traffic at that time?

The Gateman confirmed in his deposition that there was no congestion during the few moments prior to the accident, that no vehicle was to cross from West to East and that there were only 2 or 3 vehicles ahead of the bus to cross over from East to West. This is corroborated by several witnesses and accordingly, I accept the position as actually obtaining a little before the collision.

7.3.6. What were the circumstances under which the Gateman could not close both the gate leaves in time?

7.3.6.1. The Gateman was required to commence closing the gate leaves as soon as the bell started ringing for the Down Suburban train. Although he says that he proceeded to discharge that responsibility but succeeded in closing the western gate leaf only before the collision occurred, the circumstances in which the collision had occurred would point to a different sequence of events as under :

7.3.6.2. The Gateman stated in reply to a question that while he was closing the western gate leaf, the train was in sight at a close range of 180-240 metres. Such a situation would not have arisen if he had the full five minutes time at his disposal or at least two minutes time (which was sufficient as observed at site) to close the two gate leaves. That he did not initiate action to start closing the western gate leaf at least two minutes before the train reached the gate would lead me to believe that he had initiated action very late for whatever reason it might have been and thus failed in his duty. While coming to this conclusion, if I do not bring out the overwhelming adverse factors under which he was functioning at the gate at that time, I shall be failing to do justice to him. These are brought out in para 7.3.7.

7.3.7. Adverse circumstances under which the Gateman had been working at the Gate on 17-10-1980.

7.3.7.1. Shri Dorairaj was a temporary Gangman of the Gang having jurisdiction over the level crossing. He was not in the panel of substitutes for being deputed to work at gates during short vacancies nor was he medically cleared for the purpose. It was, however, a fact, which he admits, that he had been deputed to work at the Gate on a few earlier occasions also. On 16th October he reported for duty to his Gangmate at 07-30 hours and worked for some time with the Gang. He was then directed by the Mate to work at the gate in lieu of the Gateman who was rostered to work from 11-00 to 21-00 hours but had not turned up. Accordingly, he took up duty at the Gate at 11-00 hours, hoping to be relieved at 21-00 hours. But the person who was scheduled to relieve him at 21-00 hours had also failed to report and Dorairaj continued to work throughout the night. He says that he had tried to telephone the Station Master after 21-00 hours but could not establish contact with the latter. In any case, the position was that he was continuously on duty for about 20 hours at the Gate (and for nearly 24 hours if his duty with the Gang is also taken into account) when the accident had taken place. Having gone there with the understanding that he would be relieved at 21-00 hours, he says, he did not even make arrangements for his night meal and had to starve the whole night. That he had stuck to his post at that busy crossing for 20 hours without food and rest on a rainy night is a tribute to his sense of devotion and duty. The manner in which he had explained this situation while deposing before

me convinced me that he was a typically innocent Railway worker conscious of his duty irrespective of personal comforts and the fact that he had not taken any wrong plea to defend himself for his inability to close the gate fully is an important point to be taken notice of while considering the gravity of his offence. That he had wrongly estimated timings of different events prior to the crucial moment does not alter my opinion of this sincere Railway official and I attribute it to his rural back-ground with no serious sense of timing of events of (he did not have even a watch on him) and his low mental and intellectual calibre due to his being nearly illiterate.

7.3.7.2. When the level crossing was manned some 12 years ago, it was classified as a 'C' Class crossing with swing gate leaves of 5.5 metres width and two Gateman to operate on 12-hour shift duties, the normal position of the gates being 'closed to road'. Traffic had been increasing rapidly at the crossing as could be seen from the efforts of the Permanent Way Inspector to have it interlocked with signals as early as in 1977. His proposal did not receive attention in the Divisional Office, but he had on his own initiative, increased the number of men from two to three. This was regularised by the Divisional Office after he produced statistics in April 1979 which showed that the level crossing was handling as many as 1948 road vehicle units every 24 hours, the number of trains in the section being over 80 and the train vehicle units working out to/over 1.55 lakhs.

7.3.7.3. With such heavy traffic and constraints like narrow gate leaves necessitating passage of traffic one way at a time and badly maintained approaches, it is evident that the stipulated method of working had not been possible and the gate was practically working with its normal position 'open to road'. With trains operating at an average interval of 18 minutes and 10 to 12 minutes in peak periods, there have been road traffic hold-ups on several occasions every day and the available time for its remaining open (with no bell ringing for Up or Down trains) has been much less. This factor has come to surface soon after the accident when the Gatemen started observing the procedure rigidly by closing the gate as soon as the bell started ringing for a train. This had not only been observed by me at site but has also been given expression to by a respectable witness who uses the route every day and who deposed before me. This leads me to believe that, to somehow manage the situation, the Gatemen were (prior to the accident) permitting road traffic to pass for some short period even after the bell started ringing before closing the gate. The actual period perhaps depended on the situation of traffic on each occasion and the judgement of the man on duty. I hold that Shri Dorairaj had also adopted the same procedure as could be seen from the fact that he had been left with very little time to close the gate when he actually wanted to close. This wrongly used discretion of Dorairaj might be partly due to his being only a substitute, being deputed to work at the Gate on a few occasions only earlier but mainly due to physical and mental strain he must have been subjected to after nearly 20 hours of continuous duty at the Gate and a total of 23.5 hrs. of duty from the time he reported to his Gangmate for work at 07-30 hours on the previous day.

7.3.8. Did the Gateman actually close the western gate leaf of the crossing?

7.3.8.1. On this issue, evidence varies. The Gateman's statement that he had closed the gate leaf is supported by only one passenger of the bus, Shri Ramaswamy (witness No. 7) of Ashok Leyland who stated that he was standing close to and behind the Driver's seat while it approached the level crossing. Another passenger, Shri Vaidyanathan (witness No. 6), a Company Executive, says that when he looked at the gate after 1½-2 minutes of the occurrence he found the western gate leaf closed. Shri Jamaluddin (witness No. 8) an Assistant Engineer of the State Electricity Board, saw a man near the gate leaf but he was not in a position to say whether he was trying to close or open the gate leaf. The Conductor of the bus, Shri Narasimhan (witness No. 4), was not in a position to say in which position the gate leaf was when the bus entered the crossing.

7.3.8.2. Against this is the statement of Shri A. Marudu (witness No. 3), an eyewitness to the collision, who states that the gate was in open position. He is supported by the Guard of the train, who while looking out of the window as soon as he felt something unusual with his train while passing the crossing saw the western gate leaf in open position. While I do not give much credence to the statement of Shri Marudu for reasons already brought out, I see no reason why the Guard would have given a wrong picture of the situation particularly when he was not an affected party.

7.3.8.3. Thus, I find the evidence equally divided on the issue as to whether the western gate leaf was in closed or open position as the bus entered the crossing. One thing, however, appears certain and that is, the Gateman was there in an attempt to close the gate as testified by Shri Jamaluddin, an Assistant Engineer, who was a bus passenger and by Shri Vaidyanathan, a Company Executive, who was also a bus passenger and who found the gate leaf closed when he looked at it a short time after the occurrence. From these statements of the witnesses, I come to the conclusion that in all probability the western gate leaf was still open when the bus was about to enter the crossing from the opposite (eastern) side and the Gateman was in the process of moving it across the road. This was perhaps what Shri Jamaluddin saw at the moment his view fell on it a little before the occurrence, and the Gateman might have closed it in the last one or two seconds of the impending collision or immediately after the collision had taken place, as he was already in the process of manipulating it to its closing position by hand. I have, however, not been able to come to a positive conclusion on the issue with the available evidence.

7.3.9. Did the bus stall after crossing the Up track? Or was it forced to stop because of the western gate leaf being in closed position?

Evidence on this point also varies. While the Gateman (supported by Shri A. Marudu whose evidence I don't consider to be reliable for reasons already recorded) says that the bus had stopped after crossing the Up track, some other witnesses including the Conductor of the bus say that once the bus had entered the crossing, it had been moving

slowly and had been hit while moving. It appears that the Driver who had encountered an unexpected situation with the Gateman signalling him to stop and about to close the gate leaf on the far side, had no option but to stop and attempt reversing the vehicle. As a result of his split-second decision to stop and in the process of sudden application of brakes to achieve it, it is likely that the engine had stalled depriving the Driver of the few seconds needed to back the bus clear of the Down track on which a train was approaching the level crossing. Sudden stalling of the engine as being the only cause for the stoppage of the bus on the level crossing fouling the Down track does not appear to have occurred.

7.4. Responsibility of the Bus Driver

7.4.1. Late Raman Nair, who drove himself to death on that fateful morning was stated to be a middle aged person with driving experience of over 18 years under the Road Transport Corporation with an accident-free record. He reported for duty at about 05-30 hours after a night's rest and this was his first trip of the day. The bus left High Court (starting point of the route) on schedule at 06-00 hours and according to the passengers it was handled by him steadily till it approached the level crossing. A significant point which Shri Jamaludin (witness No. 8) made in his deposition (but not corroborated) is that the bus stopped behind some other vehicles in the approach of the level crossing when the gate was closed against road traffic for the passage of an Up Express train. (Further inquiries made on this point indicated that near about the junction between the Ennore High road and the road leading to the level crossing/a distance of about 100 metres/there is a bus halt and the bus had stopped there for passengers to alight and get in. This perhaps resulted in the bus remaining far behind the other standing vehicles and restarting after most of them had cleared the crossing. After the gate was opened for road traffic the bus moved forward following the vehicles ahead of it and the road vehicles from the opposite side had cleared the crossing. At that time the side shutters on the bus were put on due to rain and the Driver's view towards the approaching train was blocked. His front view was clear and he must have presumed that his path was clear. It is also probable that when he looked forward even while he was climbing the gradient of the level crossing both the gate leaves were open. Having presumed that he was going to cross the gate in the same manner as other vehicles ahead of him had done, he had perhaps not looked towards his left while entering the crossing. Had he done so, he would have surely seen the approaching train and there was enough time to stop as his view towards left was clear when he was 20 metres from the first track. In the same frame of mind (that he was going to cross the gate just as the vehicles ahead had done) he had also not observed the red aspect of the approach light nor obeyed the warning and gesticulations by the Gateman. While this failure of the Driver could be pointed out in a postmortem type of analysis, the psychology of any Driver in that frame of mind would perhaps be the same, particularly when one had seen the gate open at some point while approaching. Once he came on to the level crossing, it was perhaps too late for him to have understood the Gateman's shouts or gesticulations and he paid with his life for the liberties he had taken at that moment.

7.4.2. Thus, while the Driver of the bus had become a victim of circumstances, the fact remains that he had, at the crucial moment, forgotten his basic duty of obeying the red light which must be staring at his face as he entered the crossing and the warning of the Gateman on duty not to enter the crossing. I, accordingly, hold that he had failed in that duty and has to share responsibility for the tragedy.

7.5. Contribution of certain other Railway Officials to the tragedy

7.5.1. While the Gateman and the Bus driver have to share the responsibility for the collision as such, I have sufficient evidence before me to come to the view that certain other Officials of the Railway Administration charged with the safe functioning of the level crossing had contributed in a large measure to bring about unsafe conditions at the level crossing by allowing it to become vulnerable to accidents.

7.5.2. When the Permanent Way Inspector found that the traffic passing through the crossing was too much for the method being adopted to deal with it, he suggested as early as in 1977 interlocking of the level crossing with Automatic Signals but no notice was taken of his recommendation either by the Divisional Safety Officer or by the Divisional Engineer whom he addressed in the matter. The Permanent Way Inspector, had then posted one more Gateman at the crossing sometime in 1978 on his own initiative thus reducing the physical strain to the Gateman to tolerable levels. This had, however, been regularised by the Divisional Officer in June 1979.

7.5.3. In April 1979, the quinquennial census taken by the Permanent Way Inspector revealed that about 1948 road vehicle units on an average were using the gate every 24 hours and that the train vehicle units aggregated to over 1.5 lakhs. He submitted it to the Divisional Office but no notice had been taken by the concerned officials in the Divisional Office of the situation revealed by the unmanageable traffic handled at the level crossing except in the matter of regularising the appointment of the third Gateman.

7.5.4. A short observation of ten minutes at the level crossing would convince any one mentally tuned to safety at the level crossing that the width of the gate was too short to facilitate crossing of heavy road vehicles and that as many as 800 heavy vehicles were using the crossing every day but it had not occurred to any of the inspecting officials all these years to initiate action to improve at least this situation.

7.5.5. In January 1980 an accident had taken place at the crossing involving a passenger train and a road vehicle. Four Senior Divisional Officers conducted an enquiry into the occurrence and suggested the interlocking of the gate with signals. As a sequel to this, the Division had requested the Head-Quarters on 22-2-1980 to arrange for the supply of lifting barriers. Provision of lifting barriers as an interim measure, pending interlocking of the barriers with signals, would have considerably contributed to safe working of the level crossing, but it had not been done during the nine

months which intervened between the occurrence of that accident and the present tragedy. Both the accidents had occurred under similar conditions—the Gateman not having been able to close both the gate leaves simultaneously in one quick operation—but the lesson of January 1980 was not learnt to avert the bigger tragedy of October 1980.

7.5.6. This lapse gets compounded when one takes note of the fact that Railway Board had prescribed provision of lifting barriers at all important level crossings as early as in 1962 in their letter No. 62/W3/SG/115 dated 12-10-1962 and reiterated it in 1968 vide their letter No. 65/W1/LX/45 dated 8-8-1968. While accepting recommendation No. 121 of Railway Accidents Inquiry Committee, 1968 Railway Board had again reiterated their earlier instructions regarding the provision of lifting barriers in their letter No. 70/W3/SG/LX/1 dated 17-4-1970. Again in their letter No. 77/W3/SG/LX/2 dated 16-3-1979 Railway Board had directed that all level crossings in Automatic Block Signalling sections and those falling in Suburban sections should be provided with lifting barriers with interlocking. It is unfortunate that the level crossing handling over 1.5 lakhs train vehicle units did not receive consideration under any of these instructions till accidents started taking place one after another.

7.6. It is due to lack of respect for safety instructions ?

7.6.1. In their letter No. 77/W3/SG/LX/2 dated 16-3-1979, Railway Board issued comprehensive instructions regarding provision of safety aids at manned level crossings. When these instructions are fully and faithfully implemented, accidents at manned level crossings are bound to show a happy downward trend. Unfortunately, this important communication from Railway Board did not appear to have received the attention it deserved on Southern Railway. Implementation of the standards now fixed by the Railway Board will no doubt have financial implications and it is also likely that funds required for the purpose may not be easily forthcoming. But that will be no justification for not initiating action on the instructions received and framing a priority plan of action for execution depending on the availability of funds. Such a priority is still to be framed on the Southern Railway even after twenty months of the receipt of the letter. Even the first step required to be taken in the matter of upgrading the crossings on the basis of the norms fixed by the Railway Board viz. taking road census and analysing it with a view to determine the nature of safety aids to be provided at the crossings is still to be done (as in December 1980).

7.6.2. General Manager, Southern Railway, during his annual inspection of Madras-Gudur section with Heads of Departments on 23rd January 1980—two days after the first accident at this very level crossing on 21-1-1980 Inspected the crossing and recorded his instructions to provide interlocking of the Gate with signals at this and other similar crossings in the Automatic Signalling territory. These instructions appeared to have been acted upon in a routine manner (with no sense of urgency warranted by the situation at the level crossing) in that between January and August 1980 the only progress which was achieved by the Division in pursuance of these instructions was to finalise the Permanent Way Plan and send it to Headquarters for approval. By that time the project was taken over by the Construction Branch of the Signal and Telecommunication Organisation and the estimate was processed and sanctioned on 13-10-1980 and the work was still to start when the accident occurred on 17-10-1980.

7.6.3. It appears that implementation of even Railway Board's directives tends to become a casualty at the executive level and that no machinery exists to ensure that compliance of a particular item reported to the Railway Board is, in fact, complied with. As an example I may quote a recent instance wherein the Railway Board had communicated to the Commission of Railway Safety compliance by Southern Railway of an observation made in an accident report but had not been, in fact, complied as brought out during this inquiry. In his report on the Statutory Inquiry into the collision between Electric Multiple Unit trains No. E-65 and E-67 on the Down Suburban line at Madras Egmore station on Madras Beach—Tambaram Suburban Metre Gauge section of Southern Railway on the 26th October 1979, this reporter observed that train crew on that Suburban and Automatic Block Signalling section were not supplied with fuseses. In their comments to the Railway Board, the Railway Administration confirmed that all Guards had since been supplied with fuseses. This has been transmitted by Railway Board to the Commission of Railway Safety in their Office Memorandum No. 79/Safety (A&R)/1/27 dated 13-10-1980. In the course of the present inquiry, it came to notice again that the Guard of E-3 Down Suburban train had not been supplied any fuseses, either during the last one year or at any time in his service. On scrutiny, the statement of the Guard was found to be correct.

7.6.4. In a communication addressed to the Railway Administration after receiving the Report of the first accident of January 1980, this reporter suggested to the Railway Administration in March 1980 to arrange for interlocking of the Gate with signals in view of its being busy and in view of such an interlocking being mandatory in the light of Railway Board's letter of 16-3-1979. Again, on receipt of the report of the second accident, blanking off the 'Green' aspect of the Automatic Signals on either side of the level crossing was suggested pending implementation of the earlier suggestion to interlock the Gate with signals. Even that suggestion of 26-9-1980 could not be implemented before the third accident took place on 17th October 1980. It was, however, implemented within hours of the occurrence on that date. Had the suggestion been implemented earlier, the train would have perhaps approached the gate at a much lower speed than the speed of 75km./h. at which it had actually approached and the Gateman might have probably got enough time to close the gate even if he became aware of the need after sighting the train.

7.6.5. From instances of the above nature which come to notice time and again the impression one gets is that safety instructions have ceased to command the respect they deserve. This appears to be a serious matter deserving attention at higher Administrative levels if safety in train operation is to receive its proper place.

7.7. Certain Administrative and procedural deficiencies—A review appears called for

7.7.1. Deficiencies at a busy level crossing like the one near Ennore should not have normally escaped the notice of the Divisional Safety Officer, particularly when two accidents had taken place earlier in quick succession. He was a member of the Departmental Committee which enquired into the first accident and from what was observed by him on that occasion, it should have been his constant endeavour to remove the deficiencies at the crossing. But unfortunately, the warning sounded by the earlier accidents had not been taken advantage of by the safety Branch at the Divisional level or at the Railway Headquarters. My inquiry into possible causes for this failure have brought out the following deficiencies.

7.7.2. Safety Officers on the Division were being transferred very frequently. The Officer who dealt with the first accident in January 1980 was not there when the second accident took place in August 1980 and the Officer who was holding charge of the post in August 1980 was not there when the third accident took place in October 1980. Again, there was another change while the inquiry into the accident was still in progress. It is clear that with such frequent transfers, Officers cannot have the necessary grip of their charge and tend to treat their stay in the post as birds of passage. Though not officially admitted, the posts of Safety Officers on the Divisions (and at Headquarters too) have come to be treated as Cadre adjustment posts or berths for those who are not to be entrusted with other responsible posts in the Traffic Cadre. Thus, an Officer of the Cadre when posted as a Safety Officer on his first promotion treats it as a stepping stone to a more responsible post and takes the earliest opportunity to manage a transfer from the post of a Safety Officer. Officers who know that they have been posted as Safety Officers because of their not being considered suitable for other equivalent posts of the Cadre lose all interest and initiative. Even in such a condition, they are not generally allowed to continue for a reasonable period in one post and are frequently subjected to transfers.

7.7.3. The same situation appears to be in vogue in the case of the Safety Counsellors. Inspectors who are not considered good in their respective departments or those who are otherwise considered unmanageable are sent to safety Branch and such Inspectors tend to lose all interest when they realise that they are side-tracked. Such a situation appears hardly conducive to promoting safety.

7.7.4. This situation does not appear to be confined to Madras Division alone or even to Southern Railway. It appears, therefore, that there is a justifiable case for a review of this (perhaps unwritten) policy by the Railway Board if the Safety Organisation on the Railways are to be expected to function with a reasonable degree of efficiency. Firstly, the impression that this Branch is meant for those not suitable for other posts should be erased from the minds of the officials concerned and secondly they should be given reasonable tenures when transferred to posts in the Safety Branch if their morale is to be kept at a reasonable level. In other words postings to the Safety Organisation should command a degree of respect in the minds of Officers who are drafted to it as well as those who are to deal with them. It appears therefore desirable that only those who have a flair for the work and those whom the Administration considers suitable for such work are drafted to the Organisation. To achieve this, if it becomes necessary to throw these posts open to other Departments connected with train operation, it may be worthwhile considering it. It is only then that the Officers can be expected to come to grips with the problems of safety they handle and do justice to the work they are entrusted with.

7.7.5. Another deficiency which appears to be affecting the Safety Branch on the Division is that there is no proper machinery for taking systematic follow up action on recommendations made by Departmental Enquiry Committees which investigate into accidents or those made by the Commission of Railway Safety. The recommendations are allowed to remain on individual files and the implementation of a particular recommendation is made to depend on the efficiency of the Office staff who handle those files. It appears desirable that important recommendations are brought on to registers and are regularly reviewed by Officers at appropriate levels. Had such a review been in vogue in Madras Division, the inordinate delay in implementing the recommendations of the Enquiry Committees which suggested interlocking of the gate in January 1980 would perhaps have been avoided and this accident would not have taken place. I have since been advised by the Railway Administration that this deficiency has since been rectified in Madras Division and that other Divisions have also been suitably advised.

7.8. Could the accident have been prevented?

7.8.1. Of the three persons who were instrumental in causing the collision, it is clear that the Motorman could not have prevented it. He had the right of passage for which appropriate signals were cleared for his train. Even if he had seen the approaching road vehicle from a distance, there was no reason for him to assume that it would not stop short of the gate. At a speed of 10km./h. the road vehicle might have taken less than three seconds to infringe the path of the train from the moment it entered the crossing. That time interval is too short for the Driver of a train running at 75km./h. and he could not have done anything to prevent the collision even if he jammed the brakes the moment he realised that the road vehicle was entering the crossing.

7.8.2. The Driver of the road vehicle was expected to be alert and to exercise his best judgement while entering the crossing to satisfy himself that it was safe for him to do so. There is no evidence before me that he had been rash in entering the crossing or that he was not in proper senses. No Driver of prudence would like to endanger his own life by entering a crossing in the face of an approaching train and I do not believe that late Raman Nair had deliberately done it with the knowledge that the train was so close to him. The sequence of events that a train had passed a little earlier that the gate was opened for clearance of road traffic thereafter that several vehicles ahead of him had cleared

the crossing, that the gates were open when he had probably looked at it from a distance, that the side window shutters were hiding his view of the approaching train—all these had connived in depriving him of his judgement at the moment of crossing and he had failed to independently satisfy himself of the correct position before actually entering the crossing or to heed the warnings of the Gateman. Had he done so, he might have, perhaps, prevented the accident.

7.8.3. The Gateman had the specific responsibility of closing the gate when it was not safe for road vehicles to cross. The overwhelming situation in which Shri Dorairaj was placed at that moment has already been brought out. Had he been more alert or had the two gate leaves been coupled and moved together, he would have, perhaps, succeeded in closing the gate in one operation and thus prevented the collision even if he failed to act when the bell started ringing.

7.8.4. I cannot help repeating that the concerned Railway Officials would have created conditions conducive to preventing the accident, had they seriously taken the warnings of the two earlier accidents. I am clear in my mind that by their acts of omission and commission, by their inaction and want of action, they had allowed its functioning become more vulnerable and should, therefore, take their due share of responsibility for the accident.

VIII. CONCLUSIONS

8.1. Cause of the Accident

On a careful consideration of the factual, material and circumstantial evidence at my disposal, I have come to the conclusion that the collision which occurred on the morning of 17th October 1980 between E-3 Down Electric Multiple Unit "Madras-Gummidipundi Suburban Passenger" train and Pallavan Transport Corporation Bus No. TMN 1607 at level crossing No. 10 at km. 13.20 between Tiruvottiyur and Ennore stations on Madras-Gudur Broad Gauge double line section of Southern Railway was caused on account of the road vehicle infringing the path of the Suburban train while it was on run on clear signals between Automatic Signal No. 120 and Home Signal No 1 of Ennore station.

8.2. Responsibility

8.2.1. I hold the following persons responsible for the accident :

- (i) Shri Dorairaj, Gangman, who was on duty as a Gateman at the time of the Occurrence.
- (ii) Late Shri Raman Nair, Driver of Bus No. TMN 1607.
- (iii) Certain other Railway Officials who had by their acts of omission and commission allowed the functioning of the level crossing became more and more vulnerable to accidents.

8.2.2. Shri Dorairaj was appointed to casual Railway service as a Gangman on 1-9-1973. On the date of occurrence he was working as a substitute Gateman at level crossing No. 10 under the instructions of his Gangmate. The extenuating circumstances under which he was functioning on the date of occurrence will no doubt be taken into consideration by the Railway Administration while quantifying his responsibility for the collision.

8.2.3. Southern Railway Administration may identify and determine the individual share of responsibility of each of the officials coming under 8.2.1 (iii) above on the basis of their respective functions and the degree of failure in discharging those functions.

8.3. Relief Arrangements

I am satisfied that the injured had received prompt medical attention from the public of the locality who had taken the initiative to shift them to the nearest Government Hospital expeditiously and from the Hospital Authorities on their being admitted as patients.

IX. REMARKS AND RECOMMENDATIONS

9.1. While interlocking of the level crossing near Ennore with signals (which has since been completed) considerably improves safety to road and rail traffic, it is likely to aggravate detentions to road vehicles at the crossing. The ultimate solution to this problem will, therefore, be replacement of the crossing by a road-under-bridge. The Railway Administration appears to have initiated some action in this regard. In view of the rapidly increasing road traffic at the level crossing, it is recommended that early steps may be taken by the Railway Administration in co-ordination with the State Government to get the proposal finalised and the work executed.

9.2. From what has been brought out in paras 7.5 and 7.6 of the Report, it appears that even important safety instructions issued by a higher authority are viewed in a rather routine manner by certain Railway Officials. Southern Railway Administration may consider measures which would promote respect for such instructions by all Officials connected with safety.

9.3. A review of the present policy and practice in the matter of posting of officers and Inspectors for posts connected with safety appears called for (paras 7.7.2., 7.7.3. and 7.7.4). Southern Railway Administration may consider measures which would keep up the morale of these Officials at a reasonable level and ensure reasonable tenures for them once they are posted to the Safety Branch. Railway Board may consider issuing suitable guidelines to the Railways in this respect.

9.4. A suitable machinery which would enable the safety Officers on the Divisions and at Headquarters of the Railways to keep track of implementation of important safety recommendations made by Departmental Enquiry Committees or Commission of Railway Safety and accepted by the competent Authority is recommended.

9.5. An urgent review of safety aids required to be provided at manned level crossings on the basis of the guidelines contained in Railway Board's No. 77/W3/SG/LX/2 dated 16-3-1979 and preparation of a priority plan of action on the Railway is recommended (para 7.6.1) The position is not very different on South Central Railway. Railway Board may consider suitably advising South Central Railway Administration and other Railway Administrations which may be in a similar position. Railway Board may also consider how quickly funds for execution of such works could be made available to meet the requirements of Railways on a programmed basis.

9.6. Railway Board in their letter No. 63/W3/SG/88 dated 16-11-1970 advised the Railways that the approach operated warning bell cannot ensure the standard of safety desired, particularly at busy level crossing gates. Experience has shown that the bell arrangement itself is not a very reliable arrangement. Several witnesses who deposed before me have also given expression to this besides my own observations while I was at this and some other level crossings. In particular, the bell arrangement for noninterlocked level crossings may even mislead the Gateman thus endangering safety. It is recommended that bell warning as a safety aid to non-interlocked level crossings may be discontinued.

Yours faithfully,

Sd/

(B. P. SASTRY)

Commissioner of Railway Safety.

BANGALORE :
24-12-1980

Railway Board's comments on various paras of the Report :—

Para 9.1 : Construction of Road Over/Under-bridges in replacement of existing level crossings is undertaken on cost-sharing basis with the State Government/Local Authority. Proposals for such schemes have to be sponsored by the State Government/ Local Authority together with an undertaking to bear their share of the cost as per extant rules. No proposal for construction of a Road-over-bridge in replacement of existing level crossing at Km. 13/2 between Tiruvottiyur and Ennore stations on Madras-Gudur section of Southern Railway has so far been received from the State Government/Local Authority.

However, in view of increasing traffic at this level crossing, Southern Railway are processing the proposal for replacement of this level crossing with a road over-bridge. The State Government have also been requested to initiate necessary proposal in the matter.

Para 9.2 : Commissioner of Railway Safety has apparently based his recommendation on the fact that the Railway had not complied with the provisions of Railway Board's letter No. 77/W-3/SG/LX/2 dated 16-3-79, referred to in para 7.6.1 of the CRS's report. While issuing these instructions, the Board were very clear in their mind that it would not be possible for the Railways to introduce all these desirable safety features in the immediate future. The idea behind issuing such comprehensive instructions, was to enable the Railways to act in a planned manner so that over a period of time all the level crossings could be provided with necessary facilities. In the absence of such detailed guidelines, the provision of safety equipments/devices at the level crossings, was not being done in a planned manner resulting in adhocism.

In view of the financial constraints, it is not possible to provide all the facilities at all the level crossings envisaged in the above referred Railway Board's letter within a short time. All the Railways have been repeatedly reminded to start planning for the provision of these safety devices at the level crossings in a phased manner. However, as desired by CRS, necessary instructions have been reiterated to the Zonal Railways (Copy enclosed).

Para 9.3 : In pursuance of the recommendations made by the Railway Accidents Enquiry Committee-1978 in part-II of their report, the Board have approved of a minimum tenure of 2 years to the persons posted in the safety Organisation. Necessary instructions, in this regard, are being issued separately.

Para 9.4 : Necessary instructions have since been issued (copy enclosed for ready reference).

Para 9.5 : Guidelines for the provision of safety aids at manned level crossings have been given to the Railways vide Board's circular letter No. 77/W-C/SG/LX/2 dated 16-3-79, superseding all earlier instructions on the subject. Although it is very much desirable for the Railways to implement these instructions expeditiously, nonetheless due to financial stringencies the implementation has necessarily to be done on a programmed basis.

Para 9.6 : Accepted. Instructions have been issued to Railways that provision of Warning Bells at non-interlocked level crossing gates may be discontinued.

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