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

# RAILWAY ACCIDENT INVESTIGATION REPORT

ON

**Collision of Goods Train Engine No. WG-8235 with  
Private Tractor No. UTP-1823 at Engineering  
Manned Level Crossing No. 153-B at Km. 1188/14-15  
between Moth and Erich Road Stations  
on Jhansi-Kanpur Central Broad Gauge  
Double Line Section of Central Railway's  
Jhansi Division at about 20.40 hours  
on  
25th June, 1980**

### SUMMARY

- (1) Date . . . . . 25-6-1980.
- (2) Time . . . . . 20.40 hours.
- (3) Railway . . . . . Central.
- (4) Gauge . . . . . Broad (1676 mm).
- (5) Location . . . . . At manned Engg. Level Crossing No. 153-B, located at Km. 1188/14-15 between Moth and Erich Road stations on the Jhansi-Kanpur Central Section.
- (6) Nature of Accident . . . . . Collision of engine No. 753 Dn. Goods train with a Tractor-trailer unit.
- (7) Consisting of : (Train) . . . . . (i) Engine No. 8235 WG + Brake Van.  
(Road Unit) . . . . . (ii) Tractor No. UTP-1823 with Trailer.
- (8) Speed . . . . . (i) Train—About 65 Km/h.  
(ii) Tractor—Under 10 Km/h.
- (9) (a) Operation . . . . . Absolute Block System with 2-Aspect Lower Quadrant Signalling.
- (b) Working of the Level Crossing . . . . . Not protected by signals; No telephone connection with station at either end of the Block Section; 2 Gatemen on 12 hours rostered duty.
- (10) No. of Tracks . . . . . Single.
- (11) Gradient . . . . . 1 in 1000 falling.
- (12) Alignment . . . . . Straight, right from Moth station.
- (13) Weather . . . . . Dark with heavily overcast sky; No moon visible; No background light anywhere on the horizon; Moderate breeze.
- (14) Visibility . . . . . No foliage or structure to interfere with the line of sight from road or rail in the affected inter-section. Hence, excellent visibility under ordinary conditions, but poor at the time of the collision because of adverse weather conditions (at night).
- (15) Cost of Damage . . . . .
- |                             |                  |
|-----------------------------|------------------|
| To Locomotive . . . . .     | Rs. 3,000        |
| To Track . . . . .          | Rs. 900          |
| To Gate-lodge . . . . .     | Rs. 250          |
| Total (Estimated) . . . . . | <u>Rs. 4,150</u> |
- (16) Casualties (Confined to road vehicle only) . . . . . Killed—3  
Insured—6 (4 grievous and 2 simple).
- (17) Cause . . . . . Due to the Level Crossing having been left open to road traffic in the face of an approaching train, the presence of which was quite beyond human capabilities to detect, as the locomotive was travelling without its headlight, without whistling and probably without its marker lights burning.

(ii)

- (18) Responsibility . . . . . No individual Railway staff held responsible.
- (19) Summary of Important Recommendations.
- (i) Drivers to whistle frequently, when the headlight is 'Off' and if the view ahead is not clear.
  - (ii) Speed limit, when a locomotive runs without its headlight, to be standardised.
  - (iii) Gatemen's duties to be reviewed.
  - (iv) Provision of W/L type Whistle Boards to be examined and a policy decision taken by Railway Board.
  - (v) Toning up the maintenance of locomotives at all Loco Sheds.

No. C-10(INQ)/43

GOVERNMENT OF INDIA

**MINISTRY OF TOURISM & CIVIL AVIATION**

(Commission of Railway Safety)

**From :** The Commissioner of Railway Safety, Central Circle, Churchgate Station Building Annexe, 2nd floor, Maharshi Karve Road, Bombay-400 020.

**To :** The Secretary to the Government of India, Ministry of Tourism & Civil Aviation, Sardar Patel Bhavan, Parliament Street, New Delhi-110 001.

**Through :** The Chief Commissioner of Railway Safety, Lucknow-226 001.

Sir,

I have the honour to submit, in accordance with Rule 4 of the "Statutory Investigation into Railway Accidents Rules, 1973", issued under the Ministry of Tourism and Civil Aviation's Notification No. RS. 13-T(8)/71, dated 19-4-1973, the Report of my Inquiry into the Collision of No. 753 Down Goods train's Engine No. WG 8235 with a private Tractor No. UTP-1823 at the manned Engineering Level Crossing No. 153-B situated at Km. 1188/14-15 between Moth and Erich Road Stations on the Jhansi-Kanpur Central Broad Gauge Single Line Section of the Central Railway's Jhansi Division, at about 20.40 hours on 25-6-1980.

**2. Inspection and Inquiry**

(a) Although it is not obligatory for such an accident as this to be inquired into by the Commission of Railway Safety, taking into cognizance, however, the consequential fatality to no less than 3 persons, I consider this particular accident to be sufficiently serious as to merit an Inquiry by me.

(b) On the 28th June 1980, in the company of the Chief Transportation Safety Superintendent, Bombay, the Divisional Railway Manager, Jhansi and other officers of Jhansi Division, I inspected the site of accident at Km. 1188/14-15 and also on the next day visited 5 of the injured persons who were still undergoing satisfactory treatment at the Maharani Laxmi-bai Medical College Hospital at Jhansi.

(c) A Press Notification was issued on 27-6-1980 in the local Hindi dailies "Dainik Jagaran" and "Aaj" inviting members of the public having knowledge relating to this collision to give evidence at the Inquiry which I commenced at Moth station on 28-6-1980, or

to communicate with me by post. The District Magistrate and the Superintendent of Police were also duly notified at Jhansi.

(d) The Officers present at the Inquiry were :—

**Railway**

Shri Y.N. Trehan . . . Chief Transportation Safety Superintendent, Central Railway, Bombay.

\*Shri R. Balakrishnan . . . Additional Chief Engineer, Central Railway, Jhansi.

\*Looking after the duties of Divisional Railway Manager.

**Civil Authorities**

Shri Narendra Singh . . . Tehsildar, Moth (from 17.00 hrs. to 20.00 hrs. on 28-6-80).

Shri S.N. Tripathi . . . Station Officer (Police) Moth (from 18.30 hrs. to 20.00 hrs. on 28-6-80)

(e) The evidence of a total of 39 witnesses was recorded. Initially, 35 witnesses (comprising 3 of the injured, the local Tehsildar, the Station Officer of the local Police Station, the Medical Officer in charge of the local Primary Health Centre and 5 outsiders besides 24 railway employees) deposed before the Inquiry. As the Gateman who was on duty at Level Crossing No. 153-B at the time of the accident, could not be produced at that time, his evidence as well as that of 3 other railwaymen was recorded at a later stage.

(f) In this Report, unless otherwise apparent from the context, the terms "right"/"left" "leading"/"trailing", "front"/"rear", etc. are generally in reference to the direction of travel of No. 753 Down Goods train.

**3. The Accident, a brief description of**

(a) On Wednesday, the 25th June 1980, No. 753 Down Goods train, hauled by Engine No. WG-8235, left Moth station at 20.29 hours for Erich Road. On the way, at about 20.40 hours, it collided against a private Tractor No. UTP-1823 which was right across the track blocking its path at the manned Engineering Level Crossing No. 153-B situated at Km. 1188/14-15 on the Jhansi-Kanpur Central Broad Gauge Single Line Section of Central Railway's Jhansi Division. The Tractor was at that time hauling a trailer carrying 7 persons.

(b) The speed of the train at the time of the collision was about 65 Km/h and it came

to a stop at Km. 1189/6-7 having travelled a distance of 546 metres from the Level Crossing, pushing all the way the tractor engine, which got embedded in the locomotive's cattle-guard.

(c) The visibility was at that time quite poor, as it was a cloudy night.

#### 4. Casualties

3 persons who were travelling on the tractor itself died on the spot while out of the 7 persons seated in the trailer, 6 suffered injuries, 4 of them grievously.

### II. RELIEF MEASURES

#### 5. Intimation

(a) The first intimation of the Collision was received at Moth station, when at 22.30 hours 2 Gangmen of Permanent Way Gang No. 11, located very near the Level Crossing No. 153-B, brought the news of the collision to the Assistant Station Master on duty, who took immediate steps to inform all concerned and also to alert the Medical Officer in charge of the local Primary Health Centre.

(b) The Jhansi-based ARME Van and Breakdown Special were both ordered at 22.40 hours and, whereas the latter was subsequently cancelled, the Medical Relief Van arrived at the accident site at 01.50 hours of 26-6-1980.

#### 6. Medical Attention and Relief

(a) Amrokh village, to which the party travelling by the tractor and trailer belonged, is just 250 metres away from the Level Crossing No. 153-B. Hearing the crash, the villagers rushed to this Level Crossing to investigate and took immediate steps to carry the injured to the Primary Health Centre at Moth and arrived there by 22.15 hours. Straightaway, First Aid and other appropriate medical care was provided by the Medical Officer, at whose behest the injured were soon transported by the villagers by road to the Maharani Laxmibai Medical College Hospital at Jhansi, where superior facilities are available.

(b) Thus, by the time the Railway's ARME Van reached the site, the injured had already been removed for treatment. The 3 dead bodies were moved only after obtaining the permission from the Police and then sent to the Mortuary of the Maharani Laxmibai Medical College Hospital, Jhansi, for Post Mortem examination.

#### 7. Restoration

After disengaging the tractor engine that got meshed into the locomotive cattle guard and completion of the essential repairs to track, through communications were restored at 03.26 hours on 26-6-1980. As a result, 2 goods trains had to be cancelled, besides the regulation 'en-route' of 2 passenger trains and 2 more goods trains.

### III. THE TRAIN, THE ROAD VEHICLE AND THE DAMAGE

#### 8. Composition of the Train

(a) No. 753 Down is a regular daily sectional Goods train, which runs daily from Jhansi to Bhimsen, near Kanpur Central. Scheduled to leave Jhansi at 15.05 hours, this train generally suffers a late start of upto 4½ hours. Its composition at the time of the collision was limited to the locomotive No. 8235 WG and the breakvan, the rest of the load having been detached earlier at Paricha (one station preceding Chirgaon).

(b) Inclusive of its tender, the WG 8235 engine had an overall length of 23.4 metres (77'-10") and an overall weight of 176.25 tonnes in fully laden condition. The date of its last POH was 30-8-1976. It was running engine foremost on that ill-fated journey and both the pre-accident as well as post-accident examination showed that its brake power was fully effective.

NOTE : The Driver of the Goods train was promoted as 'C' Grade Driver only on 5-5-80; earlier, he was a Shunter. He underwent the Steam Drivers Course in 1969 and did his Refresher Course (Steam) in November 1972, but after that he did not receive any further training. He had not so far been either rewarded or punished in his service.)

#### 9. The Road Vehicle

(a) The Tractor was an ESCORT 35 h.p. model bearing Registration No. UTP 1823. There were at least 3 persons seated on the tractor which had a canopy fitted on it.

(b) At the time of the accident, this tractor was hauling a trailer, in which were seated 7 persons.

#### 10. Damage

(a) There were but minor damages to the WG 8235 steam locomotive proper, although its cattle guard suffered extensive damage. The Breakvan was not affected in any way.

(b) Mainly due to the effect of the "dragging ahead" of the tractor engine (which got entangled in the Steam locomotive's cattle guard), 20 CST-9 plates and 30 tie-bars got damaged on the track ahead of the level crossing.

(c) The collision having caused the coupling arrangement (between the tractor and its trailer) to snap, the trailer was thrown against the another wall of the gate lodge, which was situated just ahead of the Level Crossing to the right side.

(d) The tractor itself was completely smashed up, with its component part strewn along the track and it was a total write-off. However, the trailer suffered but light damage by way of dents.

(e) The total cost of repairs to Railway assets has been estimated at Rs. 4,150/-, with component-wise break-up as below :—

	Rs.
WG-8235 locomotive . . . . .	3,000
Permanent Way . . . . .	900
Gate Lodge . . . . .	250
<b>Total</b>	<b>4,150</b>

The cost of damages to the road unit has not been ascertained.

#### IV. LOCAL FEATURES

##### 11. The Section and the Site

(a) The direction of the line at the site of accident is North-Easterly. The approach to the Level Crossing No. 153-B is straight right from Moth station onwards. There is a falling grade of 1 in 1000 from a distance of about 2 Km. in the rear. A plan of the accident is appended as Annexure I.

(b) The kilometrages, reckoned from Bombay VT, are given below in the direction of motion of the Goods train :—

	Km.
Jhansi . . . . .	1127.72
Chirgaon . . . . .	1159.47
Moth . . . . .	1182.60
Site of Accident . . . . .	1188/14-15
Erich Road . . . . .	1195.07
Bhimsen . . . . .	1333.58
Kanpur Central . . . . .	1347.40

(c) On the Section, trains are worked on the Absolute Block System, with Neal's Ball Token Block Instruments and 2 orthodox aspect lower quadrant signals.

(d) There was no speed restriction (either permanent or temporary) imposed in the vicinity of Level Crossing No. 153-B.

(e) There are as many as 12 Engineering Level Crossing between Chirgaon and Moth and 5 between Moth and Erich Road. Each of these Level Crossing is protected in each direction separately by a W/L Warning Board, erected 800 m in rear of it, even if it happens to be manned by Gateman and, inspite of satisfactory all-round visibility of the Level Crossing. Besides these 17 gates, of which 6 are unmanned, there also 3 "Traffic Gates". Given below are the locations of the 17 "Engineering Gates" and their Warning Boards for the Down direction only. (Locations of the Warning Boards provided in the Up direction are not tabulated) :—

S. No.	Level Crossing No.	Location of Level Crossing	Location of its 'Dn' Warning Board
1	2	3	4
		Km.	Km.
1.	136-C	1161/5	1160/7
2.	137-B	1163/8-9	1162/12

1	2	3	4
		Km.	Km.
3.	138-C	1164/11-12	1163/14
4.	139-C	1166/9	1165/14
5.	141-A	1169/12-13	1168/11
6.	142-C	1170/12-13	1169/14
7.	143-A	1173/1	1172/4
8.	144-C	1174/8	1173/12
9.	145-C	1176/3	1175/6
10.	146-C	1177/12	1176/16
11.	147-B	1179/9	1178/12
12.	148-C	1180/11	1179/14
13.	151-C	1184/7	1183/10
14.	152-C	1185/9	1184/13
15.	*153-B	1188/14-15	1188/2
16.	154-C	1192/16	1190/10
17.	155-C	1193/11-12	1193/1

\*Accident occurred here.

##### 12. Level Crossing No. 153-B

(a) Manned Engineering Level Crossing No. 153-B is a 'B' Class, non-interlocked gate with the normal position of gate leaves closed to road traffic. The rail-road intersection is a square crossing. Visibility is unimpaired for a considerable distance (i.e. as far as the eye can see), from and towards the railway and particularly so in the absence of any foliage or bushes in the quadrant comprising the train and the tractor on the respective approaches to this crossing. The gate lodge is situated "ahead" of the Level Crossing.

(b) As exceedingly good visibility exists from the direction of the rail as well as road, it is not required under the extant rules and regulations to provide either a telephone connection or W/L type Warning Boards at this Level Crossing. However, as brought out under para 11(e) supra. Whistle Boards have been provided on either side of this Level Crossing at a distance of 800 metres from the Gate.

(c) Appropriate road-signs are, however, not posted on either side of this level crossing to warn road-users, as this level crossing serves merely an unmetalled "katcha" road which leads on the "right" to the Jhansi-Kanpur highway. Because of recent rains, the road top was very slushy. Sighting distance is excellent all around, particularly so from the direction from which vehicular traffic (the bullock cart followed by the tractor-trailer) was travelling.

(d) As per the last quinquennial census done in June, 1978, the traffic density at this level crossing was 7,565 train-vehicle units.

(e) There are 2 gatemen posted, each with 12 hours of rostered duty, one from 08.00 hours to 20.00 hours and the other from 20.00 hours to 08.00 hours. Thus, the collision had occurred within about 40 minutes of the gateman on duty having taken charge of the gate.

### 13. Other Features, relevant to this Accident

(a) The gate leaf on the "right" side was undamaged, from which circumstance it can be informed that the gate was open for road traffic at the time of the collision.

(b) The ill-fated tractor-trailer was closely following a bullock cart. This bullock cart managed to escape unhurt.

(c) Having got entangled with and lodged into the locomotive's cattle guard, the tractor engine was pushed all the 546 metres of distance through which the locomotive travelled before finally coming to a halt. As a result, for a distance commencing from 25 metres away right up to 546 metres, a drag mark was clearly visible on the track 50 cm inside of the left rail. As depicted in Annexure 1, there was, of course, further evidence of damage to the track in the 17 metres immediately in rear of this mark, besides various parts and components scattered on the track as well as on both sides of it. Bodies of 3 persons who were riding on the tractor at that juncture were found at a distance of 35.7 m, 37.2 m and 46.8 m ahead of the level crossing.

(d) The tremendous impact having caused the tractor-trailer coupling arrangement to snap, the trolley hit the gate lodge (which was situated just ahead and to the right of the level crossing) damaging its outer wall, before finally coming to a halt at a distance of 17 metres beyond the level crossing. Had not the coupling arrangement given way, the trailer would have been pushed further onwards alongwith the tractor, with even worse consequences to the 7 persons seated in the trailer.

(e) It was the 13th night of the full moon, with moonrise at 18.51 hours, but the visibility at 20.40 hours was quite poor due to the sky heavily overcast with clouds. It had rained earlier in the day but, at the time of the collision, there was no rain, although there was moderate breeze blowing across the track. There were no light-sources anywhere around the site to provide any background lighting nor was the sky-line visible in the horizon.

## V. SUMMARY OF EVIDENCE

### 14. Evidence of Shri Ram Dass, an occupant of the trailer hauled by the tractor

(a) Shri Ram Dass deposed that he and his family members (7 seated in the trailer, hauled by the tractor on which were seated 3 others, besides Shri Kadori Lal the tractor driver) were returning home at about 20.00 hours, when at the level crossing near his village 'Amrokh' a train hit the tractor. Rendered unconscious immediately, he regained his senses only after receiving medical attention at the Primary Health Centre, Moth. The appearance of the train-engine was quite sudden as neither was its headlight 'ON' nor did it whistle. He added that the level crossing gate lamp was not lit.

(b) In reply to a question, he asserted that, as he sat in the trailer facing in the direction

of motion of the tractor trailer, he considered himself quite competent to comment upon whether or not the train-engine was travelling with its headlight 'ON'. When asked about the speed at which his vehicle was moving, he stated that they were proceeding necessarily very slowly as there was a bullock cart just ahead of them for some distance.

(c) When questioned as to how, under given conditions of visibility, he was able to notice even an unlit gate lamp, and yet not sense the approaching train, he replied that over and above the noise made by the tractor he could not hear the sound of the approaching train and further that, as the gate was open, no one would really expect a train to arrive; hence, no one would be on the look-out for a train. He maintained, however, that the gate lamp was not lit.

(d) When questioned as to how Shri Kadori Lal, the alleged driver of the tractor managed to escape entirely unhurt when none of the 3 others seated on the tractor could survive the collision, Shri Ram Dass replied that the tractor was having a canopy fitted on it and its rigging possibly came in the way of others.

### 15. Evidence of Shri Kadori Lal, the alleged driver of the tractor

(a) Shri Kadori Lal produced his tractor driving license No. 4535/J/15/78 (valid upto 14-2-81) and confirmed what had been stated by Shri Ram Dass. He further added that he was unable to see the train engine until he got on to the track and at that stage the train engine was rushing at him from only a few feet away. He had barely any time to jump off the track to save himself, while shouting a warning to the others. It was a foggy night and the engine had no headlight. The gateman himself was not to be seen nor was the gate lamp lit.

(b) Upon cross-examination, he clarified that, only when the gateman Shri Jagat Singh was on duty, the level crossing was occasionally left open. He added that the level crossing was always closed whenever he came upon it at night and this was the first time that it was found open. However, as the level crossing was open and a bullock cart ahead was already passing, he did not particularly look out for any train engine. He confirmed that this level crossing was found closed and locked later that night but he was not aware as to who closed the gate after the accident.

(c) When questioned as to how, of the other 3 persons travelling on the tractor, not even one could manage to emulate his example in jumping off the tractor, all he could say was that he could somehow succeed in saving himself.

(d) He also added that he had stayed back at the gate after the accident so as keep vigil over the dead bodies. But he was not able to give any satisfactory explanation as to why he did not come forward to give information to either the Civil or Police or the Railway

authorities, who arrived at the site later on and who were making assiduous inquiries as to the precise nature and course of events relating to this accident.

**16. Evidence of Shri Ram Lal, an eye-witness to the collision**

(a) Shri Ram Lal deposed that he was near the level crossing when he saw a bullock cart enter the gate closely followed by a tractor-trailer. That he was able to see the train only as the tractor got on to the track astounded him, particularly as until that juncture he was totally unaware of the approaching train although he could clearly see the bullock cart and the tractor-trailer. He did not think that the gate lamps were lit and, after the collision, he concentrated on finding out about the extent of injuries and deaths, as the villagers rushed to investigate and render help. He could not, therefore, say categorically whether the gateman was at his appointed place or not.

(b) Since he was the first person to come upon the accident scene, he was questioned whether he met Shri Kadori Lal, the alleged tractor driver, and Shri Ram Lal replied in the negative. When asked as to whether the tractor tried to overtake the bullock cart he replied that the tractor did hoot repeatedly but the bullock cart did not give way.

**17. Evidence of Shri Balloo, another eye-witness to the collision**

(a) Shri Balloo stated that he was walking towards the level crossing on the approach road on the "right" side, when he was overtaken first by the bullock cart and then by the tractor-trailer. He was not able to hear the approach of any train and he first realised that something untoward occurred when he heard the terrible sound of the collision, whereupon he immediately ran to the level crossing. There he met Shri Kadori Lal.

(b) As the visibility of the approach track from Moth side was unobstructed for a considerable distance, this witness was questioned as to how he was unable to sense the approaching train. His reply was that the engine had no headlight and further that, over and above the noise produced by the tractor, he could not hear the approaching train. He also confirmed that the tractor driver repeatedly but in vain hooted in order to overtake the bullock cart.

(c) When asked whether he saw the gate being opened, he said that when he first noticed the gate he was only 15' away from it and it was open. Because the range of visibility was poor, he was unable to notice the condition of the gate from a longer distance.

**18. Evidence of Shri Barey Singh, driver of the bullock cart that was just ahead of the ill-fated tractor**

(a) He stated that he was returning to the Government farm near Amrokh village at about

20.00 hours and, as he approach the level crossing No. 153-B, there was a tractor behind him. The tractor hooted quite a lot, possibly calling for him to give way or perhaps to alert the gateman of the level crossing ahead. As he reached the level crossing, the gateman on duty (Shri Jagat Singh) opened the gate. Just as he was crossing the track, the gateman shouted to him to rush across as a train was approaching and his own first reaction was that the gateman was perhaps joking because he himself was not aware until then of any approaching train. However, he was able to clear the level crossing just in time but the tractor, which was following him some 5' in rear, was not so lucky, however. As it was getting late, he pushed on to his destination, without waiting to investigate as to the outcome of the accident.

(b) On cross-examination, he stated that the level crossing was closed initially and he could see the red light of the gate lamp which was also further reflected in the headlight of the tractor behind. The level crossing is on a slight hump on the road side. When he was about 15 to 20 feet before the level crossing he got to wondering whether he ought to stop short and let the tractor go ahead, when he found that the gate was open to road traffic. In reply to further questioning, he stated that he did not actually witness the operation of gate-opening but the gate must have been opened while he was approaching the level crossing because it was in the closed state a bit earlier.

(c) When asked as to how it was that he was unable to sense the approaching train, Shri Barey Singh replied that the tractor noise must have drowned any sound made by the approaching locomotive, which was neither whistling nor had its headlight burning. That was precisely why his initial reaction was that the gateman was possibly "fooling", when he shouted to him to clear across at once.

(d) Queried further on the gateman's actions, he confirmed that the gateman was also waving frantically his hand signal lamp; he was not, however, quite certain as to the "aspect" of the lamp, whether it was showing red or white. He was not particularly friendly with Shri Jagat Singh, the gateman on duty, nor was he related to him; he had merely passing acquaintance with him just the same as with other gatemen at other level crossings which he uses frequently; that was all.

(e) In reply to another question, he said that actually a boy was driving the tractor, with one more person seated on either side on the tractor itself. Although, it was clear to him that it was a youngish person in the driving seat, he could not identify him.

**19. Evidence of Shri Chhakkilal, Mate of gang No. 11**

(a) He stated that the gang quarters were located quite close to the level crossing No. 153-B. It was about 20.30 hours that he was



startled by a very loud noise and he set about finding out as to what had precisely transpired. On arrival at the gate, he found that both the gates were closed and locked against road traffic. Both the gate lamps were burning bright but Jagat Singh, the gateman on duty, was absent. After a quick survey of the track for damages sustained, he had relayed all the pertinent information about the collision, the casualties and also the extent of damage to track through 2 of his gangmen\* to Moth station. As the gateman on duty was nowhere to be found, he then recalled other gateman, Shri Rahim Ali, to man the gate for the time being. He also deputed another gangman with a message to the adjacent Gang No. 12 for help by way of men and materials in effecting speedy repairs to the track.

(b) He added that both the Medical Relief Van from Jhansi, and the Gang No. 12 arrived at about 01.50 hours, whereupon speedy action was taken, under the supervision of Railway Officers at the site, to remove the dead bodies, to disengage the tractor engine from the locomotive cattle-guard and also to attend to the damaged track.

(c) In reply to a query, he stated that he examined the engine only at about 23.00 hours, at which time neither its headlight nor any buffer beam light was burning.

#### 20. Evidence of Shri Mohd. Ishaq, Driver of the goods train

(a) He stated that his train left Jhansi with a load of 11-26/880 tonnes. The complete load having been detached at Paricha, he was thereafter left only with the Brakevan in the rear. While approaching Gate No. 153-B a vehicle suddenly entered from the right side and dashed against his engine. He immediately applied both the vacuum brake and the steam brake to come to a halt within 7 to 8 Telegraph Posts. He then took a round of his locomotive to find that a tractor had got entangled into the cattle-guard.

(b) Soon, the Guard came up to say that there were some casualties. He immediately sent his Fireman, Shri Girdhari Lal, to Erich Road Station to report about the accident. In the meantime a crowd of villagers were trying to find out about the whereabouts of the Driver, which frightened him; he, therefore, took to his heels towards Erich Road Station with a H. S. lamp in his hand.

(c) During the cross-examination about the engine headlight, he confirmed that he checked the headlight at the time of taking charge of the locomotive in the loco-shed at Jhansi, when he found it O.K. He had switched on the headlight and also lit the buffer beam lights at Chirgaon Station. The headlight behaved erratically, going dim and bright intermittently but, on the approach to this particular gate No.

153-B however, the headlight was O.K. In fact, he could see the Gateman near the gate on the right side and the gate was open to road traffic. When asked as to whether the Gateman was doing anything in particular, he replied that the Gateman was simply standing and he agreed that this was rather surprising, in view of the situation of the Gate being open to road traffic while a train was rushing towards it.

(d) On further cross-examination, he said that the headlight went out completely only after the accident, probably because some wiring had worked loose as a result of the shock of the accident itself. When asked as to how could the post-accident examination of the in-coming Engine at the Jhansi Loco Shed fail to show that the head light was defective, he suggested that, due to vibrations on the journey back to the Shed, some loose contact might have got re-established.

(e) He also clarified that the buffer beam lights lit by his fireman (Shri Girdhari Lal) displayed white, because he was not supplied with red slides. Also, proper dubber carriers were not provided on this locomotive, with the result that some locally made covers had to be used. When questioned as to how, after the accident, only one dubber was found in position on the loco and that, too, not burning and how both the "covers" were missing, he argued that the impact of the collision may well have caused the locally made covers to fall off and, likewise, the second dubber as well. In reply to another query, he clarified that buffer beam lights, treated rather as minor items, were not wont to be reflected in the "Repairs Slip"; this was also the case with his Engine, when it went back to the Shed, after the accident, on 26-6-80.

(f) Asked whether he whistled on the approach of this level crossing, Shri Mohd. Ishaq confirmed that, whereas he did whistle continuously, it was not for him to explain as to how the others did not hear the locomotive whistling. Perhaps, the noise produced by the Tractor engine might have drowned all other outside sounds.

(g) When queried about the arrangements for protecting the train in the front, he clarified that he had instructed his Fireman, Shri Girdhari Lal, to first fix detonators on the track on his way to Erich Road Station. Further, when he made his escape from the engine, he did verify on his way to Erich Road Station that detonators were properly fixed as per rules. When replied that he detailed his other Fireman, Shri Rakshi, to look after the steam.

(h) Queried on the speed of his train, he said that he was proceeding at 40 to 45 Km/h. The speedometer of the locomotive was functioning satisfactorily. When told that the evidence of inter-station journey times taken by his train, as culled from the Control Chart showed that his speed must have been well over

(\* Gangman Shri Banwarilal and Shri Ram Lakhan substantiated this evidence.

45 Km/h, he replied that he may have made a slight error in his assessment. By way of explaining as to how his train, comprising merely of the engine and Brakevan could travel as far as 7 to 8 TPs even after the application of both the steam and vacuum brakes, he admitted that the shock of the collision did shake him up and as he was in a "confused" state for a while, there was some time-lag before he could re-act to the situation. The brake power of his engine was O.K., but the regulator was 'open' at the time of the collision.

**NOTE :** Fireman (Shri Rakshi and Shri Girdhari Lal) corroborated the above evidence, excepting that they both also attested to being otherwise busy with other duties on the locomotive just prior to the collision whereby, not having been on look out duties at the critical juncture, neither of them had any contribution to make as to the precise sequence of events leading to this accident.

#### 21. Other evidences regarding the engine lights

(a) Shri Brij Lal (a Leverman at Chirgaon) confirmed that the engine headlight was burning, but he was not certain, however, about the buffer beam lights. Shri A. K. Pandey, (ASM at Moth station) stated that the engine had no headlight but the buffer beam lights could be seen. Shri Ram Chandra (Pointsman at Moth station, who is also in charge of "Traffic" Gate No. 149) confirmed that this goods train passed without either its headlight or its marker lights burning; when queried further, he conceded that he could have been mistaken in his impression regarding the buffer beam lights, particularly if these lights were very faint or dim. While confirming that this Goods train passed without headlights Shri Bihari Tante (Safaiwala at Moth station who is also in charge of "Traffic" Gate No. 150) stated that the buffer lamps were lit.

(b) Shri M. M. Khan, DME (Power), Jhansi, who was also the first Railway Officer of the Mechanical Engineering Department to reach the site after the accident, stated that the headlight was off when he inspected WG-8235. He then checked the installation and found that, although the dynamo was O.K. the headlight was defective. Facing the engine from the front, only the right-hand dubber was in position and even this was not burning. The locally made covers were both missing. When queried further, he clarified that dubber-carriers were missing on a large number of locomotives and, because of non-availability of this particular item, a temporary expedient was resorted to by the Jhansi Loco Shed by fitting locally made covers on the top of dubber holes, in order that the lights do not get extinguished while the locomotive is on the run. He promised to issue suitable instructions that information on this item must also be posted while filling the Repairs Slip for all in-coming engines.

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#### 22. Evidence of Shri W. A. Khan, Guard of the goods train

(a) He stated that, about 10 minutes after the train left Moth Station, he heard a loud noise and was simultaneously thrown down in the brake van, which had received a heavy jolt. He was perplexed for about 2 to 3 minutes and, looking back, he found thick smoke in the rear. Immediately as the train came to halt, he went ahead to ascertain that, contrary to his apprehension, the locomotive did not derail; instead, he found that the engine had in fact collided against a tractor at the Engineering Gate No. 153-B, which was wide open to road traffic. Parts of the badly smashed tractor could be seen all along the track, although the visibility was restricted to hardly 50 metres and, by the time he could locate the injured as well as the dead bodies, a group of villagers came on the spot. He immediately made out a report, which he sent through Fireman, Shri Girdhari Lal, to Erich Road Station. In the meantime, as some of the villagers were shouting for the driver and the guard of the train, the driver ran off, fearing assault, while he himself completed the task of protecting the train in the rear.

(b) In reply to a question, he stated that he did not find any gateman at the Gate, which had already been closed and locked by the time he reached it. He clarified that, on the advice of someone in the crowd, he quickly shed his uniform so as to become un conspicuous and thus avoid the crowds wrath.

(c) When queried about the engine headlight, he stated that it was functioning O.K., when it was switched on at Chirgaon, but the headlight was very faint when the train stopped at Moth station. He had no knowledge of the condition of the headlight at the time of the accident.

#### 23. Evidence of Shri Jagat Singh, the Gateman on duty at the time of the accident

(a) Shri Jagat Singh stated that he took over charge of the gate from Shri Rahim Ali at 20.00 hours as per the duty roster. Around 20.30 hours, a bullock cart approached from Kanpur Road direction and there was a tractor behind it. After satisfying himself that there was no train approaching from either direction, he had opened the gate for the bullock cart to pass. As the visibility was quite poor, he tried to close the gate in the face of the tractor so that, with less or no noise from the tractor engine, he would be in a better position to sense any approaching train. The tractor, however, did not stop, but proceeded on to the level crossing; suddenly a train appeared and collided with the tractor.

(b) The tractor was hauling a trailer, which broke loose upon the impact and got hurled against the gate-lodge. The train engine had not headlight and, over and above the considerable noise made by the tractor engine itself, it was impossible to pick up any sound of the

approaching train. Moreover, had he not been standing on the 'Moth-side' of the level crossing in order to close the gate, he would have been hit by the flying trailer and became a casualty. He did not particularly look out for the buffer beam lights. Immediately after the accident, he closed the gate leaves, locked them and, fearing for his life, made haste to quit the level crossing.

(c) Questioned about the gate lamps, he clarified that it was he himself, who lit them as he took charge of the Gate. He also clarified that he became aware of the bullock cart only because of the noise made by the tractor behind it. When queried as to why he stopped the tractor instead of allowing it also to clear the level crossing, he replied that, because around this time daily, a shunting train usually passed his gate from Jhansi, he wanted to be doubly sure that no train was coming at that time, although he had just previously satisfied himself on this score. He added that, particularly when the visibility was poor, gateman invariably follows this practice so that, with the road vehicle is shut off, they would be better able to sense an approaching train.

(d) To explain as to how one H.S. lamp got damaged, he said that he left it at the gate lodge as he set about preparing to close the gate. Asked whether he tried to warn the bullock cart driver of the impending danger and indeed urged him to rush across to safety, the Gateman was unable to recollect having done any such thing. The appearance of the train was totally sudden and unexpected, he averred whereas right at that time he was trying to stop the tractor from entering the level crossing.

(e) To explain as to why he deserted his place of duty, he said that there had been an earlier occasion around May, 1980, when a tractor came up to this very level crossing when the gates were closed and for the reason that he did not accede to the demands for opening the gate because he had already sighted an approaching diesel-hauled train, he was beaten up. With this experience behind him, he had every reason to apprehend danger to his life on this occasion, but the very first step he took was nevertheless to close the gate against the road traffic and lock it.

(f) When asked as to what other precautions should be taken in future in order to prevent recurrence of such accidents, the Gateman, who had so far put in 16 years of service, seemed to be at a loss to postulate any steps or measures. According to him, he took all possible steps and it was only the adverse combination of unfortunate circumstances such as, firstly the poor visibility, secondly the engine coming without the headlight and without whistling and thirdly the added super-position of considerably distracting background noise made by the tractor engine which caused this tragedy.

#### 24. Evidence of Shri N. K. Gupta, Permanent Way Inspector of the Section

(a) He stated that, on the night of 25th/26th August 1980, he was informed at about 00.15 hours through the Pointsman of Chirgaon Station regarding the collision. He immediately rushed to the Station, where he found the Medical Relief Van (arrived from Jhansi) and proceeded further to the site of accident in this Van. Upon arrival there he examined the Gate Lamps and found that both of them were lit. But the Engine had neither its headlight nor marker lights burning at that time. With the prior approval of the Police Authorities, the 3 dead bodies were removed from the track. With the help of his gangmen, the tractor was then dis-entangled from the locomotive cattle-guard and the damaged portion of track repaired before declaring the track safe for traffic.

(b) Questioned about the competency of Shri Jagat Singh (the Gateman on duty, who was absent from the accident site) he replied that, during his inspections, he always found Shri Jagat Singh to be quite knowledgeable about rules; nor did he receive any complaints about his working. He added that Shri Jagat Singh was, within his knowledge, not habituated to alcoholic drinks, etc.

(c) He was, however, unable to explain as to why the contents of Jhansi Division's Safety Circular No. 54, dated 4-4-78 were not incorporated in the "Gateman's Duties" as pasted in the Gateman's Diary. This Safety Circular [issued in compliance with the Railway Board's letter No. 74/Safety(A&R)/1/13 of 8/9-7-1975, calling the other Zonal Railways to issue instructions similar to those contained in the Note which appeared under South Central Railway's G.R. 229(2), in pursuance of the Report on the Collision on 10-9-1974 at manned level crossing No. 61 between Karmad and Chikalthan Stations of South Central Railway's Secunderabad Division, inquired into by the then Additional Commissioner of Railway Safety, Southern Circle] exhorts a Gateman to invariably keep his *one* H.S. Lamp set to show red to any approaching train throughout the period his level crossing is open to road traffic. He added that, other than saving a few seconds at the most (i.e. the time actually required for the process of setting the H.S. Lamp to display 'RED'), there was no further advantage accruing through compliance with this Circular, whereas it would not be possible to display the red light in *both* the directions simultaneously on a Single Line (i.e. if the Gateman is entirely uncertain as to the direction from which a train may arrive), unless *both* his H.S. Lamps are lit. As a viable alternative, the Gateman could be issued with the type of lamp (where the red aspect can be simultaneously exhibited in a pair of opposite directions) that is fixed on push trolleys at night. Better still, he contended, would be to revert the standard practice followed some years ago and remove the blinds fixed

on gate-posts, which would then have the effect of displaying the red light of the gate lamp towards the track, when the gate leaves are open to the road traffic.

(d) When asked whether there were any instructions, either verbal or oral, that a Gate-man should put his ears on the rail-table in order to pick up the sound of any approaching train, the PWI admitted that there were no such instructions in vogue. He further felt that, in the case of gateman appointed on Medical grounds, this procedure might not be practicable to implement.

#### 25. Evidence of persons injured in this accident

During the visit to the Maharani Laxmibai Hospital, Jhansi, on 29-6-80, an opportunity was taken to examine two of the injured, namely, Shri Ghansole and Shri Meharban Singh, who were amongst the 7 who were seated in the trailer hauled by the ill-fated tractor. All that they could recall was that a bullock cart was ahead of them as they approached the level crossing situated short of Amrokh village, that the gate was open at that stage and that, just as they were crossing the gate, the tractor was all of a sudden hit by an engine coming from Jhansi direction without its headlight. As a result, the trailer was also hurled away with considerable force and they were unable to recall any more as both of them lost their consciousness, which they regained quite some time after they were admitted to that hospital in Jhansi. They both conceded that, because the gate was open to the road, they did not naturally pay any special attention to whether or not any train was coming.

### VI. TESTS AND OBSERVATIONS

#### 26. Inspection of Accident Site

(a) When the site was inspected in the company of senior Railway Officials on the forenoon of 28-6-80, the visibility from the track site was found to be excellent. Considering that this level crossing serves but a kuchha road, its state of maintenance was found to be quite satisfactory. In other words, the road surface and its approaches within the railway limits were indeed maintained to a standard not lower than that of the road outside the railway land.

(b) The equipment at the level crossing was checked and found in order, excepting for one H. S. lamp, which got damaged in the accident. As required, a pipe has been driven in the centre of the track at a distance of 30 m. on either side of the level crossing to facilitate the implanting of a staff required to support the red flag or H.S. lamp, as the case may be, in order to warn the driver of an approaching train in the event that the same is sighted when the gate is open to road traffic. To help the Gateman fix detonators under similar circumstances, appropriate indications also exist at a distance of 400 m and 800 m along the track on either side of the gate. No complaints were found to have been entered against any Gate-men at this Gate.

(c) Viewed from the road-side, the level crossing was on a slight hump. Upon inspection of the road approaches, it was found that this being a kuchha road, road signs were not posted to warn road users of the level crossing ahead. Nevertheless, from the "right" site (i.e. whence the tractor was coming), the visibility was absolutely unimpaired, there being no trees, bush or foliage that could obstruct the line of sight. The Gate-lodge itself, situated outside the quadrant that includes the approaching train as well as the moving tractor, formed no obstruction to the visibility from the "right" side.

(d) Later that night, (i.e. 3 days after the accident), the general conditions of visibility obtaining at about 20.45 hours was checked at Moth, when the sky was also heavily overcast with clouds. The visibility was found to be quite poor, particularly in the absence of any source of light whatsoever on the horizon that could highlight the skyline. However, there was absolutely no doubt that, had the headlight of the engine been functioning properly, the engine could have been noticed from at least half a kilometre away, even under the conditions of poor visibility generally prevailing at that time.

#### 27. Trials on the effect of the noise made by the tractor engine at a level crossing

(a) Inasmuch as the noise made by the tractor engine was highly significant, it was considered desirable to conduct a test at Gate No. 153/B with a tractor engine (of the same Horse Power) providing the necessary disturbing influence. However, at short notice, the wherewithal for such a test could not be organised at this very level crossing and a trial was, therefore, conducted on 1-8-80\* at 'A' Class Level Crossing No. 369-A situated at Km. 1131 on the outskirts of Jhansi on the Jhansi-Manikpur Section. The weather at that time was cloudy and heavily overcast and the moon was also not visible; the conditions were thus quite possibly very similar to those that obtained when the accident took place. Distant and far away city lights of Jhansi did, however, render the skyline towards the city faintly visible on the otherwise bleak horizon. I accordingly surmise that the conditions of visibility were possibly slightly worse on the night of 25-6-80, because of the absence of the silhouette effect under such conditions that even the skyline could not be distinguished. To provide the background sound-effects, a railway tractor of similar H.P. and belonging to the District Controller of Stores, Jhansi, was utilised for this trial and following were the observations:—

(i) The passage of No. 107 Down Passenger train, which passed the level crossing at 19.55 hours, was first observed. This train, hauled by a WP engine with headlight

\*Due to unavoidable reasons, such as another accident in the Division earlier on that day, the Railway could be represented at this test only by Sir K.K. Manrai, Divisional Engineer and Shri K.C. Saxena, Safety Controller (Traffic), whereas Shri Joginder Singh, Safety Controller (Loco) Supervised the run on the locomotive.

working, was continuously whistling. Even the engine whistle was drowned by the noise made by the tractor engine in "idling state" (which is roughly the same as the noise-level had it been slowly following a bullock cart from a distance), until the engine was some 200 metres away. At this stage, the tractor engine was made to "race" (which is what would happen, when the tractor has to negotiate the up-grade on slushy ground, with the level crossing situated on a slight hump), and the locomotive whistle could be heard only when the latter was about 75 metres away from the level crossing. Over and above the noise made by the tractor engine, the sound of the engine could not be heard until it was hardly 20 m of the gate.

(ii) Light engine No. 10212-WG was then used for the test proper and, initially, it went tender-foremost from Jhansi passing the level crossing at 20.40 hours at a speed of 25 Km/h. As the engine driver was asked not to whistle, it was ensured "a priori" that all proper precautions had already been taken by the Gatemen in charge of level crossing Nos. 369-A and 369. At this state the observers were requested not to look at the track towards Jhansi and, because of the noise made by the tractor engine, the approach of the locomotive could not be sensed until it came right upon the level crossing.

(iii) One special feature of this test was that the marker lights of the test locomotive were specially fitted with "red hemispherical glass lenses" and also carefully trimmed wicks on the K-oil dubbars, with the result that the buffer lights were indeed brighter by far than even the headlight and remarkably better visible than the headlight, as the locomotive receded away and stopped at a distance of about 1 Km. from the level crossing.

(iv) The trial engine was then made to run back towards Jhansi, passing the level crossing at 20.45 hours at a speed of about 65 Km/h without headlight and without whistling. The specially fitted experimental lenses, of course, rendered the buffer beam lights prominently visible, but the observers had to deliberately shut out the impression made by lights from their minds. With this proviso, in this case also, the presence of the engine could not be sensed over and above the noise of the tractor engine, until the engine was about 50 m. from the gate and that, too, only because the observers were particularly looking out in that direction for this engine. It is noteworthy that, at a speed of 65 Km/h, it would take just under 3 seconds to traverse this distance of 50 m.

(b) Much later, similar trials were conducted on the night of 26/11/80 at Gate No. 153/B itself by the Central Railway's Deputy Chief Operating Superintendent (Safety), who used this very tractor for his test, because it had the same horse-power (35 H.P.) as the tractor involved in the accident. These trials

were conducted just after 21.00 hours, in order to replicate to the maximum possible extent the situation in regard to the poor visibility that obtained on the night of the accident. Steam Engine No. 9853-WG was used, hauling only one brakevan just as was the case at the subject accident. The tractor was placed at a distance of 4.5 m (15 ft) away from the "right-side" gate post, on the slight up gradient leading to the hump, mentioned at the beginning of para 26(c) supra. On the assumption that any tractor proceeding up a gradient would otherwise experience trouble, particularly in slushy conditions, these trials were conducted with the tractor engine "racing". In all, 2 trials were conducted with the locomotive not sounding its whistle and in each case the locomotive started its run from a distance of 1.5 Km. away from the Gate in the direction of Moth to attain a speed of about 60 Km/h while passing the gate. Results of these trials, as communicated to the Commission of Railway Safety under the Railway's letter No. T. 102.P/127/80-81 of 11-12-1980, are summarised below :—

(i) In the first trial (time : 21.10 hours), the locomotive ran without either its headlight or its marker lights burning. Even though all the observers posted at the Gate, were alert and indeed looking out for the approach of the trial train, they were all taken entirely aback to discover their inability to sense the locomotive until it was actually passing the Gate.

(ii) In the second trial (time : 21.20 hours), the locomotive ran with only its marker lights lit and showing white; the headlight was not burning. The marker lights were found to be conspicuously visible right from the start of the trial. As the train picked up speed, the observers placed their ears on the rail-table, to check up whether they could pick up the sound of the approaching train but, possibly because of the disturbing noise of the tractor engine, nothing could be made out clearly. Indeed, the sound of the puffing engine could not be heard until it was about 20 to 25 metres away from the Gate. For this trial, a H.S. lamp, displaying red light towards the test-train, was placed at the Gate lodge, in view of what the Gateman deposed, vide para 23(d) supra. The driver of the test locomotive, who was not forewarned about this H.S. lamp, admitted later that he did not see the H.S. lamp showing red towards him.

## VII. DISCUSSION

### 28. As to the time of the accident

As per the Guard's journal, the goods train left Moth Station (Km. 1182.6) at 20.29 hours, where it had stopped earlier in order to de-train a Railway Official and it was about 10 minutes later that the collision occurred. As the train had travelled some 6 kilometres plus before colliding with the tractor at the level

crossing (situated at Km. 1188/14-15), it may be taken for all practical purposes that the accident had occurred at 20.40 hours.

**29. As to the speed of the Goods Train, at the time of the accident**

(a) In its letter No. M 224/RL/79-A of 30-8-80, the Central Railway has given the following Emergency Braking Distances (EBDs) for train-consist of a WG loco hauling just one brakevan on a down gradient of 1 in 1000 :—

Speed in Km/h	EBD in metres
45	110
50	132
60	182
65	210

The goods train had in fact travelled not less than 546 metres before coming to a halt and that, too, after pushing all along the tractor engine which got entangled with the locomotive cattle-guard in such a manner that, in addition to the track getting gouged all the way as evidenced by the "scoring" marks on the sleepers, some fairly substantial damage was caused in this process to 20 CST-9 plates and 30 tie-bars.

(b) According to the locomotive Driver [Para 20(h) supra] however, the speed of his train was about 45 Km/h, although he did concede that he might have slightly erred in this assessment. The Driver also stated that the regulator was "open" at the time of the collision and that the brakepower of his engine was satisfactory.

(c) Upon a rational consideration of the braking distance, which is indeed a key parameter in assessing the speed of a train, it becomes readily apparent that not only must the train have been travelling at a speed of not less than 65 Km/h, but there must also have elapsed certainly some fairly appreciable time-lag between the collision per se and the actual application of the brakes by the driver. The driver has also admitted that he was shaken up by the impact, and no other explanation fits in with the fact that it actually took no less than 546 metres for the train to stop after the accident.

(d) On the other hand, the driver could not have been travelling at well in excess of 65 Km/h, or else the brakevan would have in all probability derailed due to its dynamic instability at such higher speeds. Taking all these factors into consideration, I therefore opine that the goods train was travelling at a speed 65 Km/h at the time of the accident. The maximum permissible speed for this train is also 65 Km/h and, in terms of Central Railway's SR 143-2(f), trains can proceed at this speed at night even if the headlight is not burning.

**30. As to the functioning of the engine headlight, at the time of the accident**

(a) The locomotive driver maintained [Para 20(c) supra] that, although the headlight was behaving erratically, it was functioning properly

just before the collision. In fact he alleged [Para 20(d)] that the headlight went off completely only as a result of the accident. The Divisional Mechanical Engineer (Power), Jhansi, who examined the locomotive after the accident, found [Para 21(b)] that the headlight was defective although the dynamo was O.K. When the locomotive was examined on its return to the Jhansi Loco Shed, its headlight was reported satisfactory and the explanation that some loose contact might have got re-established due to vibrations on the engine's journey back to the Shed cannot be deemed altogether implausible, if credence is placed on the evidence that the headlight was behaving quite erratically even before the collision.

(b) The various trials conducted subsequent to this accident conclusively prove that, granted even the poor conditions of visibility, a locomotive headlight (had it been burning) could easily be picked out from at least half a kilometre away. However, *all* evidence from persons at this Gate (whether the Gateman-on-duty, or the road users examined, or indeed the other eye-witnesses to this accident) as also the evidence of the railway staff on duty not only at Moth Station but also at the "Traffic Gates" on either side of it is uniformly unvarying in regard to the headlight, in that it was *not* working.

(c) It may well be argued that one would have to be looking in that particular direction before noticing the headlight of a train approaching from a distance of over half a kilometre, and this argument could be applied only with regard to the Gateman's actions. Had the headlight been working properly, at least the bullock cart driver could not have failed, as he got on to the level crossing, to become aware of the train. It is too far-fetched to even imagine that any bullock cart driver would want to chance his luck and risk crossing the gate, after having sighted a train from about 100 metres away, which would roughly be the distance of the train from the level crossing as he got on to it.

(d) Furthermore, irrespective of what the driver had to say in his evidence, he could not have failed to notice the bullock cart scampering across the track and would then have taken emergent action to stop the train, had his engine headlight been burning at that time. In that case, the goods train would not have gone on for such a long distance as 546 metres! In fact, I refrained from questioning the driver if he saw the bullock cart, because I soon realised, during the course of my cross-examination, that he is a type of witness who has no compunctions about committing himself to statements that may not be true. Thus, giving equal weight to all the evidence deposed before me, I conclude that the locomotive was in all probability travelling without its headlight at the time of the collision.

**31. As to the condition of the buffer beam lights, at the time of the accident**

(a) The driver [Para 20(e)] admitted that not having been supplied with red slides, the

marker lights were showing white, when they were lit at Chirgaon. In regard to the condition of these lights (whether bright, dim or extinguished) the evidence has been varying, which is not perhaps surprising, because one would not ordinarily be looking out particularly for these marker lights when he sees locomotive roll by.

(b) The Divisional Mechanical Engineer (Power), Jhansi, who examined the engine after the accident found [Para 21(b)] that only one dubber was in position and even this was not burning, whereas the other dubber as well as the 2 locally made covers were all missing. The suggestion that these losses might have been caused by the impact of the collision is not unreasonable to accept.

(c) The results of the trial conducted by the Railway [Para 27(b)(ii)] also showed that even the 'white' marker lights were conspicuously visible from a distance of about 1.5 Km. away. The question then arises as to how the bullock cart driver and other eye witnesses failed to observe even these marker lights, if indeed these were burning at that point of time. Here, 2 possibilities suggest themselves : Firstly, that the K-oil lamps got extinguished, with the locally made covers having dropped off earlier on the run for any reason, or secondly, that the standard of up-keep of wicks and cleanliness of exterior glasses of the K-oil lamp must have been quite poor. I, therefore, hold, on the balance of probabilities, that the marker lights lit were, for a variety of reasons, not bright enough to be conspicuously visible. Further, it seems rather a moot point whether, under such circumstances that even in the face of the not-inconsiderable noise generated by the engine itself, the approach of a train could not be sensed otherwise, such marker lights would at all succeed in warning outsiders of the approaching train.

### 32. As to whether the locomotive whistle was being sounded, at the time of the accident

(a) Although not required in terms of para 1613 of the Indian Railways Way and Works Manual, having regard to the long and unimpaired sighting distance available from the rail-side as well as the road-side, W/L type Whistle Boards are provided on either side of this Gate. Whereas the Driver [Para 20(f) supra] maintained that he sounded the whistle continuously right up to the level crossing as per rules, none of those present at the Gate at that time (be it the Gateman-on-duty, or the Bullock Cart driver, the road users, or indeed the other eye witnesses examined) admits to having heard the locomotive whistling.

(b) Trials conducted [Para 27(a)(i)] showed that the locomotive whistling could not be discerned, over and above the background noise of the tractor engine, from a distance farther than 75 metres or 200 metres, depending respectively upon whether the tractor engine is racing or not. It is considered that distances of this order are adequate for the bullock cart driver

to have pulled his vehicle up sharply. Moreover, even if the bullock cart driver was committed to going ahead (simply because he considered it too late to stop short and clear of the track), the tractor driver would have heard the whistling and braked hard to stop almost instantaneously, for he must have been proceeding at less than 10 Km/h.

(c) In agreeing with the majority of the witnesses, I hold that the driver did not, in all possibility, sound the whistle continuously right upto the Gate and thus disregarded the W/L Whistle Board provided to protect this Gate. Indeed, such must be the case, if the engine headlight was malfunctioning whereby he couldn't have observed the W/L Board and if he didn't notice the same, he would have no reason to sound the whistle. With so many level crossings on the Section [Para 11(e) supra], it would be too much to expect a driver to know his road and route so well as to be aware of the precise location of each and every gate. Moreover, Central Railway's SR 143-2(f) did not call for a driver to frequently sound his whistle, when the view ahead is not clear at a time that he is proceeding without headlight.

### 33. As to the situation at the Gate, at the time of the accident

(a) The normal position of the gate at this 'B' Class level crossing is closed to the road traffic. All the evidence points to the fact that the gate leaves were open to road traffic at the time of the collision. The Gateman on duty admitted to having opened the gates [Para 23(a)] for the bullock cart to pass. Although the bullock cart driver did not actually witness the operation of opening the gate, he did testify [Para 18(b)] to having seen the gate closed against road traffic when he was some distance away from the level crossing whereas, when he was about 15 to 20 ft away from it, the gate was open for him. I conclude therefore, that the level crossing gate leaves were opened by the Gateman on duty at that occasion for the purpose of allowing the road vehicles to pass.

(b) According to not only all the Railway staff, but also the bullock cart driver [Para 18(b)], the gate lamps were lit. The road users had, however, deposed to the contrary. It is rather doubtful if these latter witnesses would have paid particular attention to the gate lamp prior to the time of the accident and it was possibly the result of an unconscious psychological reflex to depose against the Gateman on duty that led them to state that the gate lamp was not lit. The key factor, however, is that the Gang Mate, who rushed to the level crossing immediately on hearing the dreadful sound of the collision, found [Para 19(a)] the gate lamps burning bright. Whereas one may appreciate why a Gateman, who is apprehending danger to his life, should nevertheless display some commendable presence of mind in closing the gate leaves against road traffic and locking the same before making good his escape, it does

rather seem most unlikely that he would also devote some additional invaluable time (needed for gaining access to the dubber at one gate, adjusting the wick and possibly trimming it also, pouring K-oil into the dubber, lighting the lamp and finally closing the lamp assembly and repeating all these tasks at the other gate) for lighting the gate lamps during what must have been to him a veritable crisis. I accordingly hold that, in all probability, the gate lamps had been lit at the appropriate time as per the extant rules and that they were indeed burning satisfactorily at the time of the accident.

#### 34. As to the role of the Gateman on duty

(a) This Gate is not telephonically linked with either Station at the end on the Block Section within which it is located. As stated earlier, the normal position of the Gate at this 'B' Class Level Crossing is closed to road traffic and the duty of the Gateman is simply that he should *not* open his gate for road traffic unless and until he is certain that no train is sighted or that its arrival at the level crossing is not otherwise anticipated. The proper fulfilment of this task devolves mainly on the capacity of the Gateman to sense the approach of a train.

(b) According to his own admission [Para 23(c)] the Gateman was expecting around that time a shunting train from Jhansi-side to pass by. Yet, all evidence points to the fact that the gateman opened the Gate for the bullock cart to pass. The question that naturally arises then is whether the Gateman failed in his duty in opening the gate and, if so, what was the nature and extent of his failure. Trials conducted subsequent to this accident conclusively prove that, in the case of an engine moving without its headlights and without whistling, its approach cannot be detected until it is almost on the level crossing, provided that the buffer beam lights (otherwise known also as marker lights) are also not functioning. In this case, having regard to the adverse conditions of visibility at that particular juncture and the probable distance of the train from the gate (as estimated from its speed and the time required for opening the gate and for the bullock cart to negotiate the 'up-gradient' on slushy ground and get past clear of the track, exactly as did happen here). I hold that it would have been quite beyond the human capabilities to detect a train, under the given circumstances of its approach without its headlight and also without whistling. The Gateman's claim that, before opening the gate, he did his best to satisfy himself that there was no train approaching is thus acceptable. The only alternative was for him to keep on waiting for that shunting train to pass, not even knowing when indeed it would do so. This alternative action should be treated as merely an academic postulate, which is impractical not only because it is not intended that a Gateman should unnecessarily detain road traffic but also in view of his own earlier bitter experience of getting beaten up.

(c) Well as he might be expecting [Para 23(c)] a train to arrive around that time from Jhansi-side, the Gateman could scarcely have divined in advance that that particular train would be travelling without its headlight and without whistling and thus constitute a potential hazard. Having allowed the bullock cart to pass by, there was at that point of time no reason at all for him not to let go the tractor-tailor also, particularly as the latter was very closely following the former. Had he been really so very much concerned about the noise made by the tractor engine, he would not have opened the gate in the first instance, but waited instead for the tractor engine to be shut off and then used all his faculties to determine whether or not a train was on its way, before opening the gate for the waiting road traffic. It is in this context quite significant that the bullock cart driver [Para 18(a) and (d)] stated that it was the Gateman who first alerted him to the impending danger in the shape of the on-rushing train and that the Gateman was also waving his H.S. lamp frantically. This witness did not come forward initially to depose at the Inquiry but, when summoned through Government channels (as he was working on a Government farm), his evidence was tendered in such a confident, forthright and trust-worthy manner that the Gateman's failure to corroborate this point came as a surprise. There does not appear to be any logical reason for the bullock cart driver to have concocted such a version, unless it was the truth. This discrepancy is thus not easy to explain away unless the Gateman's inability [Para 23(d)] to recall this particular incident is attributed to shock-induced partial-amnesia on the Gateman's part or else to his sub-conscious over-anxiety to highlight any overt or covert action on his part to stop the tractor, when it went ahead regardless. For these reasons and having regard to the unbiased and unhesitating manner in which the bullock cart driver deposed his evidence, I accept his version that the Gateman did raise an alarm when he became aware of the train.

(d) The Gateman also claimed to having left the H.S. lamp near the Gatelodge, in order to set about closing the gate in the face of the on-coming tractor. That placing a H.S. lamp in that position was not adequate safeguard was subsequently brought out [Para 27(b)(ii)] by the trial conducted on 26-11-80. The Gateman's inability to "observe to the letter" the provisions of para 1610(c) of the Indian Railways Way and Works Manual, GR-229(2) and the contents of Jhansi Division's Safety Circular No. 54, dated 4-9-1978 (in not having planted the H.S. lamp in the centre of the track on a staff at a distance of 30 m.) was entirely due to paucity of time as the train came upon the gate "silently" and without providing any means that could have warned him of its approach. It must also be conceded that, as things were on that fateful night, he could hardly have gone a few meters before the "near-silent spectre of a train" would cross him and,



other factors (such, the speed of the train) being the same, there would have been scarcely any difference in the tragic outcome.

(c) The Gateman had displayed an adequately commendable sense of devotion to his duty by closing the Gate and locking it against road traffic before running away, fearing danger to his life and limb. His actions have to be viewed in the context of the fact that even the locomotive driver (who was certainly a stranger to the villagers) ran away apprehending safety to his person, whereas the Gateman was comparatively a familiar figure to the mob of villagers from near-by Amrokh. The frenzy of mob fury for so-called "instant justice" not being unknown, I do not hold the Gateman blame-worthy for having deserted his duty post after the collision. It may also be surmised that his closing the gate is a reflection in itself that the Gateman did not regard himself culpable for this unfortunate tragedy.

### 35. As to the role of the Tractor Driver

(a) There has been some doubt as to whether Shri Kadori Lal (the qualified and competent tractor-driver) was driving the ill-fated tractor at the time of the accident because, contrary to the normal human urge to unburden oneself by keeping on narrating about an accident, this witness kept silent at a time when Civil, Police and Railway Officials were all endeavouring their best to learn about the precise circumstances leading to this accident. Moreover, the bullock cart driver alluded [Para 18(e)] to seeing only 3 persons seated on the tractor, including an youngish person in the driving seat.

(b) As its movement was constrained by the bullock cart ahead, the tractor must have been moving at a speed of well under 10 Km/h. Having regard to the relative speeds of the train and the tractor, it is a debatable point whether or not the tractor driver would have been able to control his vehicle to stop short and clear of the track, as it all depended upon whether the tractor driver was generally vigilant about his whereabouts or if he was instead concentrating on following the bullock cart as closely as possible, with a view to overtaking it at the soonest possible moment thereafter. If indeed the tractor was driven by a youth, it is quite conceivable that, seeing the train engine rushing at him from so close a proximity, he might well have lost his nerve and failed to apply his brakes. On the other hand, it is not outside the realms of possibility that Shri Kadori Lal was indeed the tractor driver on this occasion, who had a miraculous escape by jumping off to safety just a mere second or two before the tractor was hit "square on" by the locomotive, with it also being entirely providential that he did not sustain thereby even a scratch and that later on he was far too stunned by the tragic turn of events to be able to say anything to anyone. On the basis of the available evidence, therefore, it is difficult to even surmise whether the tractor was being driven by a duly authorised and competent driver.

### 36. As to whether this accident could have been averted

(a) The very object of manning a Gate is to preclude collision between trains and road vehicles. Once a gate is open to road traffic, road-users would naturally expect a clear right of way for themselves to pass the level crossing and, with the possibility of a train arriving ruled out, they would not be quite vigilant in their look-out for trains. Should a train come upon the gate unsuspectedly at that very stage without the road-user getting any pre-warning, he may not be able to respond to this sudden situational stress by braking promptly. In the subject accident, such was indeed the case, with the road-users not the least bit suspecting any danger from the rail-side and, whereas the bullock cart managed to clear the track in the nick of the time, the men in the tractor-trailer behind the cart were unable to avert a disaster to themselves.

(b) Had the locomotive headlights been functioning properly, this accident could not possibly have occurred. But, loose electrical contacts are not unknown to develop on the run due to vibrations and this factor only brings into focus the need to pay greater attention than at present to the maintenance of headlights in the Jhansi Loco Shed.

(c) Because of its higher threshold chromaticity, red light is more conspicuous than white light. Had red slides for marker lights been issued by the Jhansi Loco Shed (and, in case these red slides were not available, surely plain glass slides could be painted over in red or else affixed with them red foil of the type commonly used for decorations), the Gateman could not have failed to become aware of these buffer beam lights on the approaching train (assuming, for a moment, that these lights had not got extinguished earlier on the run). And, had the Jhansi Loco Shed taken adequate steps to provide the standard dubber carriers for the marker lights on steam locos, there would have been no question of these lights getting extinguished on the run.

(d) Had the loco driver been whistling freely, the road users would have received some advance warning of the approaching train and the tractor-trailer moving in the rear of the bullock cart could easily have checked its motion in time so as not to "foul the track". In this case, were the headlight defective, it would surely be unreasonable to expect a loco driver to be so thoroughly familiar with literally every meter of his "road" that he can pick out the positions of the various level crossing gates on his run and then sound his whistle accordingly. The Northern Railway, however, provides in its SR 143/2(a) for the engine whistle to be used frequently when the view ahead is not clear and the headlight is defective. The Central Railway, however, did not have such a provision.

(e) The trials conducted [Para 27] concentrated on the parameter of "distance" at which an approaching train could be sensed at the Gate. The parameter of "time" is even more crucially important and the more the "time" the greater is the possibility that apposite measures will have been taken by road users to save themselves from being run over. Speed of the train becomes thus the most critical factor and it cannot be denied that, had the goods train been proceeding at a slower speed, at the very least the consequent damage to life and property could have been much less although the accident might not perhaps have been averted "in toto". In this context, Northern Railway's SR 143/2(a)(i) is of typical interest, in that it stipulates a maximum speed of only 50 Km/h on Broad Gauge if the view ahead is not clear when the headlight has already become defective; however, during moonlit night, when the view ahead is clear, the speed is limited to the "booked speed". When the train runs without headlight, the Central Railway does not make such fine distinctions but, in its SR 143-2(f), the maximum speed on Broad Gauge is limited to 65 Km/h, which also happens to be the maximum permissible speed for a steam-operated goods trains on most sections.

(f) Had there been a regulation calling for a Gateman to plant a red light directed towards the track, during the entire period that a gate is open for road traffic under conditions of poor visibility/weather, (and had the Gateman complied with it), the loco driver would have picked up this red "signal" and taken all possible steps to control his train at once and simultaneously given long whistles, whereby the collision could have possibly been averted or, at the worst, the consequences would certainly have been far less disastrous. The present instruction is that the Gateman should merely set his H.S. lamp to 'RED' and be prepared to show it to trains; in other words, in the event that the circumstances are such that he is unable to sense an approaching train, he simply will not display his H.S. lamp albeit already set at 'red', towards the track. Moreover, since under such circumstances the train could possibly arrive from any direction, it is not clear as to the particular direction towards which he ought to show his H.S. lamp.

### 37. As to the adequacy of existing instructions to Gatemen

(a) No instructions exist, either verbal or oral, as to what measures a Gateman should take when a particularly peculiar situation confronts him, like, for instance, the adverse combination of poor weather/visibility conditions and heavy interference to hearing through the background noise created by road traffic, further aggravated by a locomotive travelling without neither its headlight nor its marker lights burning. Admittedly, it is neither pragmatic nor feasible to legislate in writing for all the foreseeable contin-

gencies that may arise in such a context, however eminently desirable this idea might appear to be primarily in the interest of the safety. Thus, in such adversely complex situations, it appears that safety at manned but non-interlocked level crossings which are not provided with the facility of telephonic link-up, is by and large left, to the resourcefulness, native intelligence and commonsense displayed by the Gateman on duty.

(b) This leads to the fundamental question as to what ought to be the precise sequence of steps that the Railway Administration would expect a Gateman to take in an emergency such as this, had he suddenly become aware of the approaching engine just a little distance away. As per the existing Rules, it is enough that, when the gate is open to road traffic the Gateman keeps his H.S. lamp set to display red to any approaching train. But apart from showing the red light to the Driver, he would not be able to take any *positive* steps in preventing further ingress/entry of road-users into the crossing area by closing the gates, unless and until he has time enough to cover a distance of 30 m towards the approaching train under the prevailing conditions of poor visibility, to search for the pipe specially provided in the centre of the track for the purpose of implanting a "staff" and then to display the H.S. lamp on the "staff" showing red towards the train. And, it should be quite obvious that, under the subject emergent conditions, the gateman hardly at his disposal that much length of time.

(c) Ordinarily, after sighting the train himself, no road-user would get past the gate, even if it happens to be open to road-traffic. But should the road-users be totally unaware, for whatever reasons, of an approaching train, they would continue to push on to the level crossing and under such circumstances it would be very necessary for the Gateman to physically close the gate against the road-traffic in order to prevent further "incursion" of road vehicles on to the level crossing area. To give the Gateman necessary freedom to act thus, it would be desirable to provide him with one standard H.S. lamp (which could display white/red/green aspects) and the other the same as a "trolley lamp" (which displays the red aspect on opposite sides); with this arrangement, the Gateman can, under such adverse conditions be instructed to simply plant the "trolley lamp" in the track at the level crossing itself (and not 30 m away) to display red in *both* the directions, *before* opening the gate to road traffic and, further, if he happens to sight any train approaching, he will use his standard H.S. lamp to signal to road-users to stop. In any case, he will be relatively free to forcibly close the gates in the face of road vehicles or take any other apposite steps required of him to prevent further ingress of road vehicles within the level crossing. The merit of adopting a "trolley lamp" at the Gate is that the Gateman does not have to decide in advance, at what is certainly a crisis-type situation, as to from which direction the first train is likely to arrive.

(d) It does appear that the Railway Board have been seized for the last few years with the issue of finding an effective solution to this problem, as is evident from the following :—

(i) Reporting on the Inquiry into the collision of No. 227 Up Passenger with a motor bus at Gate No. 272/E on South Central Railway's Guntur-Donakonda section on 6-9-74, the then Additional Commissioner of Railway Safety (Southern Circle) recommended in para 45(b) that, when the normal position of the Crossing has to be kept open to road traffic, it may be provided in the instructions that the Gateman should keep a vigilant lookout for the train as soon as he receives the first communication and plant the "staff" on the track with the danger signal displayed towards the approaching train, and further that this danger signal should be removed only after the second communication is received and the gates are closed to road traffic. Vide Railway Board's letter No. 74/Safety (A&R)/1/11, dated 16-7-75, the matter is under their consideration. Acceptance of this recommendation and enlarging its scope to cover also those Gates, which are 'normally' closed to road traffic will serve to rationalise the Gateman's duties particularly if the "trolley lamp" is specified.

(ii) Reporting on the Inquiry into the collision on 23-7-77 of No. F-34 Down Goods train with motor car No. PUM 3146 at Gate No. 81-B between Makhu and Gidarpindi Stations on the Northern Railway, the then Additional Commissioner of Railway Safety (Northern Circle) recommended under para 43.4 that, in the case of a level crossing where the normal position of the gates is closed to road traffic, the gateman should just display a danger signal towards the track before he proceeds to open the gates to clear the waiting road traffic and keep on displaying this danger signal towards the track until the gates are once again closed. Vide Railway Board's O. M. No. 77/Safety-(A&R)/1/20, dated 29-1-79, this matter is under their consideration.

(e) Particularly at non-interlocked but manned level crossing gates which are not provided with telephone communication facilities, there is an urgent need for a thorough review 'de novo' of the existing instructions to Gateman, using the circumstances that have led to level crossing accidents during the past 10 years as "case studies" and taking also into consideration their medical category, the distances involved in protection arrangements and more importantly the time-frame needed for compliance with these instructions particularly under bad weather and poor visibility conditions.

### 38. As to the desirability of installing W/L type Whistle Boards at all level crossings

(a) Under para 1613(a)(i) of the Indian Railways Way & Works Manual, whistle indicators shall be erected only where the view is

not clear on either side of a *manned* level crossing. In the case of level crossing gate No. 153-B, the view is sufficiently clear and W/L Boards need not have been provided by the Railway Administration. As brought out in para 11(e) supra, it appears that a practice has developed on the Central Railway System to provide W/L type Whistle Boards at all level crossings, whether or not such installation is prescribed by extant regulations.

(b) Inquiry into the collision of a Goods train engine with a private Bus at engineering gate No. 11-B between Katni Murwara and Hardua stations on Central Railway's Bina-Katni section at about 19.50 hours on 27-10-1975 revealed that W/L Boards were installed even though the view was clear for an adequate distance on either side of that level crossing. Accordingly, a reference was made under the Commission's letter No. C-10(INQ)/12-306, dated 26-2-76 requesting for information from the Central Railway as to the conditions under which W/L Boards are being provided on this Railway at manned level crossings. A reply to this letter has not so far been received from the Central Railway, nor was this matter actively pursued further by the Commission.

(c) A W/L Whistle Board is installed to direct the Loco driver to whistle continuously from this Board upto the level crossing, which action will naturally call for the expenditure of some energy on the driver's part. Thus, if a large number of such Whistle Boards are provided in close succession to one another, compliance with this directive would necessarily, involve considerable exertion of effort on the part of the driver, besides the fatigue and discomfort caused by having to bear with the sound of the loco whistle for prolonged periods. In time, therefore, one may expect that driver to feel compelled, because of the induced physical strain, not to sound his whistle at EVERY Whistle Board and skip some; the grave risk is that it may transpire that he omits to whistle just when he ought to (as, for instance, when approaching an unmanned level crossing or a manned level crossing with limited view). It may thus be concluded, with irrefutable logic, that this situation is fraught with the potential danger of possibly tragic consequences.

## VIII. CONCLUSIONS

39. Cause.—Upon full consideration of the factual, material and circumstantial evidence at my disposal, I have come to the conclusion that the collision of Engine No. WG 8235 of the Sectional Goods train No. 753 Down with a private Tractor No. UTP 1823 hauling a trailer at the manned Engineering Level Crossing No. 153-B at Km. 1188/14-15 between Moth and Erich Road stations of the Jhansi-Kanpur Central single line Broad Gauge section of Central Railway's Jhansi Division at about 20-40 hours on 25-6-80 was the result of the gate-leaves being

open to road traffic in the face of an approaching train, the presence of which was quite beyond human capabilities to detect, as the locomotive was travelling without its headlight, without whistling and probably without its marker lights burning.

#### 40. Responsibility

(a) The very purpose of manning a Level Crossing Gate has been defeated in this case. The Gateman has also admitted, 'suo moto', to having been aware of the daily passage of the Down Shunting train around this time past his Gate. Yet, I cannot logically hold the Gate-man responsible for this accident, because no matter how sharp the look-out kept by him on this occasion was, it was destined to be of no avail, in view of the regrettable combination of adverse circumstances like poor visibility in the context of the dark and cloudy night and the total absence of pre-warning of any kind of audio-visual stimuli from the on-rushing locomotive by way of headlight or whistling, etc.

(b) Firstly, the failure of the engine head light, secondly, the violation of SR. 143-1(b) (ii) in that the marker lights were *not* displaying *red* lights on the Single Line Section and thirdly, the non-availability of proper dubber-carriers, which led to the introduction of locally made contraptions to cover the marker light recesses from the top are all illustrative of certain deficiencies in the Jhansi Loco Shed, which when compounded with the prevailing conditions of poor visibility, had made it absolutely impossible for the Gateman to discharge his duties properly. For these lapses, however, hold no single person or persons responsible.

(c) Thus, although this 'freak' accident occurred due to the cumulative effect of the failure of several 'Railway Staff', I cannot, in all fairness, deem any person to have been so negligent as to hold him individually responsible for it. Indeed, as pointed out earlier in para 35(c), it is not even certain as to whether the tractor was being driven by a competent driver, nor that this could have been avoided had it been driven such.

(d) Other minor infractions which came to light during this Inquiry have been separately referred to the Railway for action.

41. **Relief Measures.**—With reference to Section II of this Report, I have no comments to make on the relief measures arranged by the Railway, as medical attention was organised almost immediately by the villagers of Amrokh well before the Railway's ARME Van could reach this site.

### IX. REMARKS AND RECOMMENDATIONS

42. **Drivers to whistle frequently, when the headlight is 'Off' and if the view ahead is not clear.**—The Central Railway has responded to my immediate Recommendation that, when the visibility ahead is poor and the engine is travelling without its headlight, the engine whistle

shall be used freely. SR. 143-2(f), as revised by the Central Railway on 11-8-80, is reproduced below :—

"SR. 143-2(f)—In the event of headlight becoming defective on the run, the Driver shall work the train during the hours of darkness at a speed not exceeding 65 Kms P.H. on the Broad Gauge, 55 Kms P.H. on the Metre Gauge and 25 Kms P.H. on the Narrow Gauge, subject to other speed restrictions in force. He shall make use of engine whistle frequently."

#### 43. Speed limit, when a locomotive runs without its headlight, to be standardised

(a) The deterioration in the element of safety relating to a locomotive running without its headlight being the same on all the Zonal Railways, it does seem quite illogical and irrational that they should adopt different practices, as brought out in para 36(c) supra, in regard to the authorised maximum speed under such a circumstance. It is accordingly recommended that the Railway Board should examine this issue, with a view to adoption of an uniform procedure by all the Zonal Railways with respect to the speed limit to be observed by locomotive drivers when the headlight is 'off'.

(b) G.R. 122 requires the Driver to keep a good look-out while the train is in motion and G.R. 76(b) requires him not to trust entirely to signals but also to be always vigilant and cautious. Obviously, when the engine headlight is defective, neither of these requirements can be fulfilled to the same extent quantitatively, as when the headlight is O.K. Yet, when the headlight is defective, Central Railway's S.R. 143-2(f) prescribes on Broad Gauge a speed limit of 65 Km/h, which also happens to be the maximum permissible speed for steam-driven goods trains on most sections. Such a stipulation cannot be regarded as safe for Goods trains and, pending Railway Board's decision on para 43(a) supra, it is recommended that the Central Railway should straightaway issue a Correction Slip to their SR. 143-2(f), limiting the speed to 50 Km/h on Broad Gauge, when trains are to ply with defective headlights.

#### 44. Review of Gatemen's duties

(a) As brought out under para 37(d) supra, the Railway Board have already been examining for some years, in the light of the recommendations made in the Reports on Inquiries into level crossing accidents by the various Commissioners of Railway Safety, the existing instructions on the duties of Gateman in charge of a non-inter-locked Gate, which is not linked by telephone facilities with the adjacent Station. As this exercise has been on the anvil for years, it is very necessary now to expedite its completion. It is, therefore, recommended that the Railway Board should quickly formulate a time-bound action-plan to probe into this matter 'de novo', in the light of the circumstances that caused the various Level Crossing Accidents during, say, the past

decade and keeping also in view the Medical Category of Gatemen, the distances which these Gatemen have to cover in protecting their Gates and, more importantly, the amount of time needed for the performance of activities stipulated thus, particularly in conditions of bad weather or poor visibility and issue their revised instructions on the duties of Gatemen, which will be consistent with the achievement of the dual criteria of safety and practicability.

(b) Apropos of this review, it is also recommended that the Railway Board should simultaneously examine the extent of accountability of a Locomotive Driver, should he be unable to bring his train to a halt before the red light planted by the Gateman, simply because he was denied an adequate pre-warning (in terms of both 'time' and 'distance' within which to brake his train) of that red light due to, inter alia poor conditions of visibility.

**45. Too many Whistle Boards.**—The hazard of providing too many Whistle Boards has been brought out in para 38(c) supra and it is recommended that the Railway Board may give their careful consideration to this issue and take a policy decision on the following :—

- (i) Restricting the installation of W/L type whistle Boards to only those locations where their provision is expressly covered by para 1613(a)(i) of the Indian Railways Way & Works Manual; and
- (ii) A programmed removal of W/L Boards already provided, although not required in terms of para 1613(a)(i) (ibid).

**46. Toning up the maintenance of locomotives at all Loco Sheds.**—Whereas the Railway has no doubt its own on-going routine to ensure the proper up-keep of all components connected with engine headlights and engine marker lights, it is nevertheless very necessary, in view of the deficiencies brought to light at this Inquiry in the functioning of the Jhansi Loco Shed, that the Railway should quickly launch a vigorous drive to up-grade its present achievement levels in respect of the following :—

- (i) Maintenance of headlights on steam locomotives;
- (ii) In pursuance of the provisions of SR. 143-1(b)(ii), the ensured provision of red marker lights on locomotives plying on single line sections, through, inter alia, the speedy standardisation and procurement of the red hemi-spherical lenses mentioned in para 27(a)(iii) supra; and
- (iii) Ensuring that each and every deficiency, however trivial it might 'prima facie' appear to be, relating to the fittings for buffer beam lights (or, marker lights) is invariably posted in the 'Repair Slip' prepared in the Shed for all incoming engines, and thereafter properly attended to.

Yours faithfully,

Sd/-

(N. P. VITHAL)

Commissioner of Railway Safety,  
Central Circle, Bombay

#### RAILWAY BOARD'S VIEWS ON VARIOUS PARTS OF THE REPORT

The findings of the Commissioner of Railway Safety with regard to the cause of the accident and responsibility therefor as given in paras 39 and 40 of the report are, prima facie, acceptable.

**Para 42 :** The Central Railway has amended Subsidiary Rule 143-2(f) to the effect that when the head-light of the locomotive becomes defective on the run, the driver shall make use of the engine whistle frequently.

**Para 43 :** A decision has been taken and necessary instructions have also been issued to the Railways vide this Ministry's letter No. 84/Safety (A&R)/29/2, dated 10-6-1985.

**Para 44 :** In this connection, attention is invited to this Ministry's O.M. No. 81/Safety (A&R)/29/7, dated 28-6-1982.

**Para 45 :** The decision to provide whistle boards even at those level crossings, where the visibility is good, has been further reviewed by the Railway. The Railway has accepted the CRS's recommendation and issued necessary instructions to all concerned to comply with this.

**Para 46 :** Necessary instructions have been reiterated by the Central Railway Administration as desired by CRS.

Provision of buffer/marker lamps is already covered by GR/SRs and Railways are being advised to see that these are following scrupulously.

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