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

RAILWAY ACCIDENT INVESTIGATION REPORT

ON

**Collision of No. EC CNB Special goods train with No. EC 445 Up goods train
at Yadugram Block Hut of Eastern Railway on 3-8-81.**

SUMMARY

Date	3-8-1981.
Time	4.43 hours.
Railway	Eastern.
Gauge	B.G. (1676 mm).
Location	Km. 422/7—9 opposite Yadugram Block Hut Station on Gujhandi-Gurpa Double Line Electrified Section (Grand Chord) of Dhanbad Division.
Nature of accident	Rear end collision.
Trains involved	(1) EC 445 Up Goods train consisting of WAG-4 loco with a trailing load of 73 wagons and 1 Brakevan. (2) EC CNB Special hauled by WAG-4 loco with a trailing load of 33 BOX wagons and 1 Match Truck.
Speed	(1) 25 Km/h. (2) 120 Km/h (run-away speed).
System of operation	Absolute Block System.
Number of track	Two electrified.
Alignment	Straight.
Gradient	1 in 120 Down.
Weather	Clear.
Visibility	Good under headlight and not rain.
Cost of damage	Rs. 68,20,000/-
Casualty	Killed — 2 (Railway servants). Grievous injury — Nil. Simple injury — Nil.
Relief arrangements and medical attention	Satisfactory.
Cause	Driver of EC CNB Special having left the locomotive unattended in a descending grade of 1 in 85 without taking proper precautions and applying the vacuum brake.
Persons held responsible	Late Electric Driver of EC CNB Special. *Guard of EC CNB Special also to blame.

Note:—Important and crucial paras have been underlined.

(29th Report of CRS--6th of 1981-82).

* Since acquitted by the Court.

(ii)

Important Recommendation . . . (1) The Railway Administration may institute an intensive drive for counselling all Electric Drivers especially those with poor records and give them special course of instructions in trouble shooting (para 9.1, a).

—203603

Abbreviations used in this Report

CTSS	. . .	Chief Traffic Safety Superintendent.
CEE(D)	. . .	Chief Electrical Engineer (Distribution).
ACE(T)	. . .	Additional Chief Engineer (Track).
ACME(C&W)	. . .	Additional Chief Mechanical Engineer (Carriage & Wagon).
ADRM(G)	. . .	Additional Divisional Railway Manager (General).
ADRM(O)	. . .	Additional Divisional Railway Manager (Operation).
SI/GRP	. . .	Sub-Inspector/Government Railway Police.
OC/GRP	. . .	Officer in Charge/Government Railway Police.
DSP	. . .	Deputy Superintendent of Police.
BDO	. . .	Block Development Officer.
P.S.	. . .	Police Station.
ART	. . .	Accident Relief Train.
MFD	. . .	Maschivon Fabrik Deutschland.
DME(P)	. . .	Divisional Mechanical Engineer (Power).
AOS	. . .	Assistant Operating Superintendent.
SDO	. . .	Sub Divisional Officer.
Sr. DEN	. . .	Senior Divisional Engineer.
DSO	. . .	Divisional Safety Officer.
DSTE(M)	. . .	Divisional Signal & Telecommunication Engineer (Maintenance).
TDI	. . .	Traction Driving Instructor.
OHE	. . .	Overhead Equipment.

Note:—In this report, the terms 'right', 'left', 'leading', 'trailing', 'front' & 'rear', where used, are in reference to the direction of movement of EC CNB Special Up Goods train.

Rules relevant to the accident

"G.R. 141. Driver not to leave engine when on duty.—No Driver shall leave his working locomotive or his self-propelled vehicle when on duty, whether at a station or on a running line, except in case of absolute necessity and after a competent man has been placed in charge of the locomotive or vehicle. In the case of a self-propelled vehicle manned by a Driver only, a Driver may leave it when necessary, provided he has put the vehicle in low gear with the ignition switch in the 'off' position and has screwed down and locked the hand-brake."

(iii)

"G.R. 417. Protection of single and multiple unit train stopped between stations.--(a) If the stoppage is caused by a defect which the driver is competent to rectify, the driver shall attend to the defect provided that, it is necessary for him to leave the driver's compartment, he shall before leaving, put on the automatic brakes fully and also apply the hand-brake in his driving compartment. He shall advise the guard if the stop is on a grade steeper than 1 in 100, the guard shall also put on the hand-brake in the Guard's compartment and on at least two other vehicles, if available.

(b) The detention exceeds or is likely to exceed 10 minutes, the train shall be protected in accordance with the Rule 166.

(c) In cases where there is no competent person available in addition to the driver and the guard and, the driver has to go himself to protect the train in front, he shall before going, carry out the precautionary measures prescribed in sub-rule (a).

Time Chart of Colliding Trains

Station	KM	Time of EC 445	Speed of EC 445 Km/h	Time of EC CNB Spl.	Speed of of EC CNB Spl. Km/h	Remarks
Koderma . . .	393.55	1.10		2.58		
Gujhandi . . .	403.45	1.35		3.35		
		3.15		3.55		
Lalbagh B.H. . .	405.42	3.25		4.05		
		3.47				
Dilwa	410.14	4.04		4.20		
Up Distant Signal of Nathganj	412/37			4.28 4.33		Stopped due to TOS of EC 445. Home signal given at 4.31 hours.
Nathganj B.H. . . .	415.57	4.13	15	4.37	60	Run-away train.
Baskatwa B.H. . . .	417.73	4.29	20	4.40	80	Run-away train.
Yadugram B.H. . . .	422.20	4.40	20			
Site of collision . . .	422/7-9	4.43	25	4.43	120	Collision.

Government of India,
Ministry of Tourism & Civil Aviation,
(Commission of Railway Safety).

From: K. Ganapati,
Commissioner of Railway Safety, Eastern Circle,
14, Strand Road (12th floor), Calcutta—700 001.

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

Through: The Chief Commissioner of Railway Safety,
16-A, Ashok Marg, Lucknow—226 001.

Sir,

In accordance with Rule 4 of the Statutory Investigation into the Railway Accidents Rules 1973, I forward herewith the Report of my enquiry into the collision of EC GNB Special Up Goods train with EC 445 Up Goods train at Km. 422/7.9 opposite Yadugram Block Hut Station of Gujhandi-Gurpa Double Line Electrified B.G. Section (Grand Chord) of Dhanbad Division of Eastern Railway at 4.43 hours on 3-8-1981.

1.2 Inspection and Inquiry

(a) I inspected the site of the accident on 11-8-1981.

(b) A Press Notification was issued inviting members of the public having knowledge relating to the accident to tender evidence at the enquiry which I commenced at Gurpa Station on 11-8-1981 or communicate to me by post at the Calcutta address. Civil and Police authorities were duly notified. The enquiry was continued at Gomoh on 12-8-1981 and concluded on the same date. I conducted a statutory enquiry at Barasat Station in connection with the occurrence of casualties to passengers of BB.510 Down on 4th & 5th August 1981. It was therefore reasonably not possible to hold the enquiry into the above accident earlier.

(c) The following officials were present at the enquiry:—

Railway Officials

1. Shri B.M. Khanna, CTSS, Calcutta.
2. „ M.S. Pai, CEE (D), Calcutta.
3. „ M.D. Khattar, ACE (T), Calcutta (on 11th only).
4. „ L.K. Mathur, ACME (C&W), Calcutta.
5. „ I.P. Singh, ADRM (G), Dhanbad.
6. „ R.M. Das, ADRM(O), Dhanbad.

Non-Railway Officials

1. Shri U.S. Jha, SI, GRP, Gomoh (on 11th only).
2. „ A.H. Khan, OC, GRP, Koderma (on 11th only).
3. „ T.B. Soreng, DSP, Gaya (on 11th only).
4. „ P.R. Mishra, Circle Officer, Fatepur, Gaya (on 11th only).
5. „ D.S. Pandey, BDO, Fatepur, Gaya (on 11th only).
6. „ D. Pathak, OC, Fatepur P.S., Gaya (on 11th only).

(d) The evidence of 29 witnesses (none of them non-railway) was recorded in the enquiry. In addition proforma and oral evidence were recorded as necessary. Relevant Railway documents were also perused.

1.3 The Accident

On 3-8-1981, EC 445 Up Goods train hauled by WAG-4 loco with a trailing load of 73 wagons and one brakevan left Gujhandi Station at 3.15 hours and was negotiating the steeply down graded Gujhandi-Gurpa Ghat Section. The following Goods train EC Kanpur Special hauled by WAG-4 loco with a trailing load of 33 BOX wagons and one Match Truck also left Gujhandi Station at 3.55 hours and started the descent on the Gujhandi-Gurpa graded section. The EC Kanpur Special however stopped at Km. 412/37 (1 in 85 down grade) on the Distant Signal at Nathganj Block Hut which was showing yellow aspect as the relevant Home signal was showing red. When the Driver of EC Kanpur Special released the vacuum he found the vacuum 42 cm. only against 50 cm. normally required. He therefore sent the Assistant Driver in rear to check the vacuum. In the meantime the Driver of the EC Kanpur Special appears to have made the fatal mistake of leaving the locomotive on the air brake only, without applying the vacuum brake and peeped into the under-side of the locomotive inside the wheel apparently with a view to check the gear case oil and bolt. At this crucial juncture, which is estimated about 3 minutes after the train 1st stopped on the down grade of 1 in 85, the train started rolling. The Driver was severed into two pieces, his head remaining in between the rails and his body on the left side outside the track. Thereafter the train commenced its onward journey without a Driver or an Assistant Driver on the footplate. The train picked up a very high run-away speed and collided with the previous train EC 445 at Km. 422/7-9 opposite Yadugram Block Hut Station building at 4.43 hours. The locomotive of the ramming train was completely smashed and came to rest fouling the Down line. Out of 33 BOX wagons on the EC Kanpur Special the last 2 BOX wagons and the brakevan were on rail. The 31st BOX wagon derailed by the Kalka end trolley while the Howrah end trolley remained on the rail. All the remaining BOX wagons were completely smashed and strewn all over the place, fouling both the tracks as shown in the sketch plan attached. The last 10 wagons of EC 445 together with the brakevan derailed, capsized and got entangled with other wagons. The loco and the first 63 wagons of EC 445 were undamaged and were on rail. There was train parting between 60th and 61st wagons and again between 63rd and 64th wagons of EC 445. The Engine and the first 60 wagons of EC 445 came to rest after travelling a distance of 1890 ft. after parting. There was practically train parting between each and every wagon of the first 30 BOX wagons of EC CNB Special. There was some damage to track and O.H.E.

(b) The weather was clear; the visibility was good under headlight conditions; and there was no rain and the rails were dry. Eye-witnesses estimated the speed of EC 445 at the time of the accident as 25 Km/h and that of EC CNB Special at 120 Km/h.

1.4 Casualties

As a result of the accident, the Guard of EC 445 was killed instantly. Even as the EC CNB Special started rolling from Km. 412/37 the Driver of the train was severed into two. There were no other cases of grievous or simple injury.

II. RELIEF MEASURES

2. (a) The first information report to the Control about the accident was given by the Switchman, Yadugram Block Hut soon after the occurrence of the accident at 4.43 hours. Thereafter all concerned were advised and arrangement were made for despatch of medical vans and relief trains.

(b) The ADMO, Gujhandi reached the site of the accident at about 8.25 hours followed by ADMO, Gomoh who reached at 8.55 hours. The doctors attended on the railway staff who sustained trivial injury.

(c) The medical van from Gomoh which was ordered at 5.05 hours, left the station at 5.30 hours and reached the site at 8.50 hours. The medical van from Gaya which was ordered at 5.10 hours, left the station at 5.50 hours and reached Gurpa at 9.00 hours where it was controlled as the same was not required.

(d) The Railway Administration made ex-gratia payment of Rs. 1,000/- each to the next of kin of the two railway servants who were killed in the accident.

2.2 Restoration and Interruption to traffic

(a) The ART/MFD of Gomoh which was working at Bermo and which was ordered at 5.10 hours, left Gomoh at 7.30 hours and reached the site at 13.10 hours. The 120 tonne crane of Dhanbad which was at Pathardih, was ordered at 5.15 hours, left Pathardih at 6.40 hours, arrived Gujhandi at 13.25 hours and was controlled there as the same was not required immediately. The Bulldozer of Gomoh which was at Dugda ordered at 6.20 hours, left the station at 8.30 hours and reached the site at 14.30 hours. The 65 tonne crane of Mughalsarai which was ordered at 5.30 hours, left the station at 6.30 hours and reached Gurpa at 18.55 hours and the site at 19.30 hours. Bulldozer of Kanpur which was ordered at 6.00, hours, left Kanpur at 9.50 hours and reached the site at 12.00 hours on 4-8-1981.

(b) The DME(P) reached the site at 7.25 hours. The AOS, Gomoh reached the site at 9.00 hours. The SDO & DSP, Gaya reached the site at 11.40 hours. ADRM(O) & ADRM(G), Sr. DME(C&W), Sr. DEN, DSO, DSTE(M), DEN(2), DME(C&W), DEN(3) & DEN(4) reached the site at 13.10 hours.

(c) Police clearance was given at 12.00 hours on 3-8-1981.

(d) Through running was restored on Down line at 12.30 hours on 6-8-1981 and on the Up line at 19.00 hours on 6-8-1981. Except for one BOX wagon which was rerailed, all the derailed wagons and the locomotive have been pushed aside by bulldozer and abandoned at site.

(e) As a result of the accident, 4 Down Mail was returned from Gurpa and run via Kiul-Gaya Section. 9 Up, 175 Up were returned from Koderma and 61 Up was returned from Hazari-bagh Road. 51 Up, 3 Up & 1 Up were diverted via Main line. No Mail, Express and Passenger trains were run on Gomoh-Gaya Section from 4-8-1981 to 6-8-1981. The rate of 129 Up was run as Passenger Special between Dhanbad and Koderma.

III. THE TRAINS

3.1 EC 445 was hauled by WAG-4 loco No. 20920 belonging to Kanpur Shed. The trailing load consisted of 73 = 74½ + 1 Brakevan. The total length of the train was 2153 ft. and its total weight 2405 tonnes. The train originated at Sitarampur where the Brakepower certificate issued to the train showed 85% Brakepower.

3.2 The EC Kanpur Special was hauled by WAG-4 loco No. 20904 belonging to Kanpur Shed of Northern Railway. The locomotive was manufactured in the year 1967 at CLW, Chittaranjan and commissioned on 25-10-1967. The loco was provided with headlight, speedometer and recorder, all in working condition. Cab No. 2 of the loco was leading. The length of the loco was 17.2 m. and its weight 88 tonnes. The loco was provided with air brake and vacuum brake for the train. The synchronising arrangement was functioning normally. The locomotive underwent POH last on 24-3-1976 and IOH on 25-12-1979 after which it had earned 4,83,502 Kms. after POH and 97,670 Kms. after IOH. The last trip inspection was done at Kanpur on 29-7-1981. The trailing load consisted of 33 BOX wagons and 1 Match Track. The length of the train was 1515 ft., its weight 2725 tonnes and its braking force 1166 tonnes. The train was fully vacuum braked. The train originated from Bondamunda on S.E. Railway where the Brakepower certificate issued for the train showed that 60 pistons were active out of a total of 70 pistons giving a brakepower of 85%. The Goods train was not subject to any further train examination enroute till the accident took place.

3.3 Cost of damage

Locomotive	Rs. 22,00,000/-
Carriage & Wagon	Rs. 40,00,000/-
Traction Distribution	Rs. 3,00,000/-
Permanent Way	Rs. 3,00,000/-
Signalling	Rs. 20,000/-
Total	<u>Rs. 68,20,000/-</u>

Note:—Commercial losses due to consignment are not included in the above.

IV. LOCAL CONDITIONS

4.1 The Section and the Site

(a) The collision occurred at Km. 422/7-9 opposite Yadugram Block Hut on Gujhandi-Gurpa Double line Electrified B.G. Section of Dhanbad Division of Eastern Railway in the civil district of Gaya in Bihar State. The railway alignment at the site is on straight and runs from East to West. The gradient is 1 in 120 down. The height of bank is about 5 ft. The country is undulating and the soil is clay mixed with mica and moorum. The ruling gradient of the section from Gujhandi to Gurpa is 1 in 80 and the maximum permissible axle load 22.9 tonnes.

(b) The permanent way consists of 52 Kg rail welded in panels of 3 on CSI-9 sleepers to M +7 density with wooden sleepers at joint. Adequate stone ballast has been provided.

(c) Monsoon patrolling was in force from July 1981. There was no security patrolling. There was a rainfall of 5 mm on 3-8-1981, 6 mm on 2-8-1981, 17 mm on 1-8-1981, 24 mm on 31-7-1981 and no rain-fall on 30-7-1981 and 29-7-1981.

4.2 Signalling

There are 5 block stations in between Gujhandi and Gurpa, out of which 4 are block huts and one station Dilwa is a 'B' Class station with one loop on the up side and one loop on the down side. All stations are provided with multi-aspect colour light signals and interlocked to Standard III. There is grade infringements at all stations which have been condoned by the Railway Board. There is no SM's control on Last Stop Signals at Gujhandi-Gurpa and Dilwa Stations. 'One Slot one Starter' is provided at all stations. Automatic replacement of Main line Starter is provided only at Gajhandi and Gurpa.

4.3 Kilometrages

The kilometrages of the stations referred to in this report are reckoned from Howrah as under:—

Howrah	0.00 Km.
Hazaribagh Road	345.17 „
Koderma	393.55 „
Gujhandi	403.45 „
Lalbagh Block Hut	405.42 „
Dilwa	410.14 „
Nathganj Block Hut	415.57 „
Basketwa Block Hut	417.73 „
Yadugram Block Hut	422.20 „
Site of Accident	422/7—9 „
Gurpa	425.54 „
Gaya	469.64 „

There are 15 to 17 masts per kilometre, odd numbers on the left side and even numbers on the right side.

4.4 Headquarters, System of Working and Train Speeds

(a) The Control office is situated at Dhanbad which is also the headquarters of the Division and one Controller is in charge of the section from Gomoh to Kanpur in 6 hours shift. Trains are worked on Absolute Block System by double line lock and block instruments.

(b) The maximum permissible speed on the Gujhandi-Gurpa section is 65 Km/h. There is a permanent speed restriction of 32 Km/h for Goods train between Gujhandi and Gurpa. There was no temporary speed restriction near the vicinity of the site of accident on that day.

V. SUMMARY OF EVIDENCE

5.1 (a) Shri K. Kumar (witness No. 1) Assistant Driver of EC CNB Special stated that his Driver tested the brake-power of the train in between Chichaki and Hazaribagh Road and again between Koderma and Gujhandi. In both tests the brake-power appeared satisfactory. Vacuum on the train engine was 50 cm. There was no trouble upto Gujhandi. His train left Gujhandi at 3.55 hours and since the Distant Signal at Nathganj was yellow the Driver applied vacuum brake. The train stopped in rear of the signal at about 4.30 hours. As vacuum was not getting more than 42 cm. the Driver told him to check the load for vacuum trouble. He got down and started checking the load. After passing 10 wagons he suddenly heard a bumping sound and noticed that the train had started moving. He ran towards the engine but could not catch the same. He waved his torch towards the brake-van and started shouting to attract the attention of the Guard for applying vacuum brake. The Guard was not seen outside nor did he get any response. He ran to the Nathaganj Cabin and told the Cabinman that the train moved leaving him on the way. The Cabinman told him that the train had already met with an accident near Yadugram Block H.t. At about 6.30 hours some P. Way patrolling staff came to the cabin and reported that one dead body was lying near the Distant signal of Nathganj. He immediately went and found that his Driver was severed into two pieces at the neck, the head portion was inside the track and the body was outside the track on the left side.

(b) Answering questions he stated—

(i) The visibility was good under headlight, the weather was clear, there was no rain and there was no wheel slipping.

(ii) Between Chichaki and Hazaribagh Road the Driver destroyed 25 cm vacuum when he passed the first testing board at a speed of 65 Km/h. The speed was reduced to 10 Km/h while passing the 2nd testing board. Similarly between Koderma and Gujhandi the Driver destroyed 25 cm. vacuum at the first speed testing board when the speed of the train was about 60 Km/h. The speed was reduced to 10 Km/h when the train passed the second speed testing board. The above tests showed that the brake-power was adequate to go down the Ghat Section.

(iii) When he left the engine the vacuum was 42 cm. which was about 8 cm. less than 50 cm. which the Drivers normally work to on this section. He did not locate any leak in vacuum upto the first 10 wagons. While checking the vacuum he noticed that all the pistons were down indicating that the vacuum brake was not applied.

(iv) The train was standing on a down gradient of 1 in 85. His examination showed that vacuum brake was not applied. The Driver had applied only the air brake. The fact that the Driver was run over showed that he was not on the footplate at the time the train moved. It would appear that it was not possible to stop the train on the graded section on air brake alone. This could be the reason for the train rolling away. The hand brake was not applied on the loco.

(v) The Driver was sober and was not addicted to drink.

(vi) The train must have stopped for about 2 minutes before rolling down. The speed of the train when the brake-van passed him was about 25 Km/h.

(vii) Normally it is the practice for the Assistant Driver when the engine stops to check the oil in the gear case, check the gear case bolt, check axle box, blower, train cocks etc. It is possible that the Driver was checking the gear case oil when the train started rolling.

5.2 (a) Shri S.M.A. Rahman (witness No. 2) Guard of EC CNB Special stated that his train stopped for 3 minutes near Distant signal of Nathganj at Km. 412/19 for reasons not known to him. Full vacuum was available in his brake-van. He exchanged all right signals as usual with the Switchman of Nathganj. Time of passing Nathganj was 4.37 hours. He then found that his train was picking up speed and there was no check of speed by the Driver. He checked the vacuum in the brakevan which was found full. He assumed something had gone wrong. He immediately applied the vacuum brake and also the hand brake, but the speed did not reduce. His train passed Baskatwa at about 4.40 hours. The Switchman was showing danger signal. He applied vacuum by pressing the handle to check the speed of the train and also applied the hand brake. In the meanwhile he heard a tremendous sound and felt a serious jerk. He got a bump on his back. He got

down from the train and found that the Down line was totally blocked. He informed the Switchman Yadugram Block Hut who had already informed the Control to save 4 Down Mail from the accident. He came to search for his Driver and Assistant Driver but did not find either. The dead body of the Guard of EC 445 was lying near the track. He came to know from the cabin of Yadugram Block Hut that the Driver of his train was killed and the Assistant Driver was left behind at Nathganj.

(b) Answering questions he stated—

(i) There was no vacuum gauge in the brake-van. He had no portable gauge but vacuum valve was working. Before starting from Km. 412/19 he exchanged signals with somebody from the engine who showed white light. When the accident happened the speed of the train was about 100 Km/h. He applied the vacuum brake 4 to 5 minutes before the accident took place when the speed was 50 to 60 Km/h.

(ii) Asked why he did not apply the vacuum brake when the speed exceeded the maximum permissible limit of 32 Km/h. the Guard replied he cannot say. He did not notice of Assistant Driver waving a signal from the ground.

(iii) When told that nobody could have shown a white light from the engine when the train started from Km. 412/19 as at that time there was neither Driver nor Assistant Driver on the foot-plate, the Guard merely replied that a signal was shown to him. At this stage Shri B. Bhartwar DME(P) stated that he had questioned the Guard on 3-8-1981 at 9.00 hours at Yadugram Block Hut Cabin and the Guard had replied him that he had not exchange all right signals with the Driver before starting from Km. 412/19. The Guard further added due to curvature it was not possible to exchange signals with the engine Driver in that position. The Guard admitted having met the DME(P) near Yadugram Block Hut Cabin but denied having told him that he had not exchanged all right signals with the Driver.

(iv) The Guard stated that he exchanged signals with Nathganj Cabin. At this stage the Switchman of Nathganj Cabin Shri P.N. Mishra was confronted. Shri Mishra, Switchman stated that the Up CNB Special was passing at a high speed and he could know that the train was out of control. Therefore he was showing red signal and shouting to the Guard of the train to attract his attention. The Guard was standing out with a green lamp in his hand Shri Mishra could not say if the Guard understood the message which he wanted to convey. Shri Rahman Guard maintained that the Switchman showed green signal and the speed of the train was only 25 Km/h.

(v) At this stage Shri S.K. Sarkar, Switchman of Baskatwa was confronted. The Switchman stated that the goods train passed at a very high speed more than that of Rajdhani Express. The Switchman showed red signal. He knew that the train was out of control as Switchman of Nathganj had informed him earlier. The Guard of the train could not be seen due to the high speed. At this stage the Guard of the train Shri Rahman admitted that the Switchman of Baskatwa was showing red signal. The Guard in turn showed him white torch to indicate that the control should give his train through path to Gurpa. Immediately he applied vacuum brake on the brake-van.

(vi) Asked when he first started applying the vacuum brake the Guard replied that he started applying the vacuum brake gradually after passing Nathganj and approaching Baskatwa he applied the vacuum brake in full but there was no reduction in speed. The time of accident was 4.43 hours.

5.3 (a) Shri P.N. Mishra (witness No. 3) Switchman of Nathganj stated that EC 445 passed his cabin at 4.13 hours. Line clear to Up CNB Special was given at 4.14 hours which left Dilwa at 4.20 hours but train out of section report of EC 445 was not received from Baskatwa. The TOS was received only at 4.30 hours and the Home signal for EC CNB Special was taken of at 4.31 hours. He found that the train was standing at the Up Distant signal. After about 5 minutes he heard the sound of approaching train and the EC CNB Special passed his cabin at 4.37 hours. There was no one to exchange signals from the engine. He assumed that the train was out of control. Apprehending danger he shouted to attract the attention of the Guard and informed Switchman of Baskatwa. He also informed the Controller that the Up train passed his cabin at a very high speed and neither the Guard nor Up the Driver exchanged all right signals with him. He heard the Controller advising the Switchman of Gurpa to put back the signals of 4 Down Mail.

At about 4.50 hours the Assistant Driver of EC CNB Special came to his cabin and stated that he was left behind by the Driver due to vacuum trouble. Since the Switchman Baskatwa informed that there was no one on the engine he deputed a gangman to search for the Driver. The search party returned and informed that the dead body of the Driver was lying near the Up Distant signal. The body was identified by the Assistant Driver.

(b) Answering questions he stated—

EC 445 passed his cabin at 4.13 hours at a speed of 15 Km/h. The EC CNB Special passed his cabin at 4.37 hours at a speed of Rajdhani Express. Earlier the EC CNB Special stopped at the Distant signal at 4.28 hours. At about 4.35 hours he got the sound that the train was moving. There was nobody in the Driver's cab in EC CNB Special and no one exchanged signals. He was showing red signals to the Guard who was standing with a green signal in his hand. The Guard did not apply the vacuum brake as there was no indication from the sparks of the brake block binding on the wheels. The weather was clear, the visibility was good under headlight and there was no rain and the rails were dry. The engine headlight of EC CNB Special was burning. The Home signal was lowered for Up EC CNB Special at 4.31 hours.

5.4 (a) Shri S.K. Sarkar (witness No. 4) Switchman of Baskatwa stated that EC 445 Up Goods passed his cabin at 4.29 hours. He gave line clear to EC CNB Special at 4.40 hours. EC CNB Special passed his cabin disregarding Home signal. He showed red signal to the Driver but did not find anyone on the engine. The Guard also did not respond to his showing red signal. The EC CNB Special passed his cabin at a very high speed. He reported the matter to the Switchman of Yadugram Block Hut Cabin and also to the Control. Later he came to know about the accident.

(b) Answering questions he stated—

(i) EC 445 passed his cabin at 4.29 hours at normal speed as on any other day. EC CNB Special passed his cabin at 4.40 hours disregarding Home signal at a speed more than that of Rajdhani Express. There was nobody on the engine. He showed red signal to the Guard but could not see the Guard.

(ii) He did not notice the brake blocks of the engine binding. He also did not notice the brake blocks of any wagon in the binding condition. The headlight of the loco was burning. He cannot say if the engine was working or dead.

5.5 (a) Shri B.N. Mitra (witness No. 5) Switchman of Yadugram Block Hut stated that he gave line clear to Baskatwa for EC 445 at 4.10 hours. Train entering section was received at 4.29 hours. He lowered signals for through passing of the train. At about 4.37 hours Switchman of Baskatwa told him that EC CNB Special which was following EC 445 lost control and was running at a high speed. He sent his porter with hand signal to inform the Driver of EC 445 that a run away train was coming behind him. He also gave the same signal from the cabin window and informed Gurpa East Cabin and Control. EC 445 passed his cabin at 4.40 hours and exchanged all right signals with the Guard. At that time he saw an engine headlight coming out from the curve at a very high speed and passed his cabin and bumped in rear of EC 445 opposite his cabin. As a result of the collision the down line was also blocked and therefore he cancelled the line clear for 4 Down Mail with East Cabin Gurpa and informed Control about the accident. The collision took place at 4.43 hours.

(b) Answering questions he stated—

EC 445 passed his cabin at 4.40 hours at a speed of 20 to 25 Km/h. EC CNB Special collided with EC 445 opposite his cabin at 4.43 hours. The speed of EC CNB Special was very high. There was no spark due to brake block binding on the loco or on first few wagons. Headlight of loco was burning.

5.6 (a) Shri A.K. Chakraborty (witness No. 6) Safety Counsellor (C&W) stated that he was present at Yadugram Block Hut cabin on 3-8-1981 for surprise check. While exchanging all right signals engine crew of EC 445 was told to run the train faster stating that a run away train

was following. EC CNB Special collided with the rear of EC 445 at 4.43 hours at Km. 422/9 resulting in the derailment of large number of wagons. There was no crew in the engine of EC CNB Special. The speed of EC CNB Special at the time of the accident was about 120 Km/h.

(b) Answering questions he stated—

There was no application of brake on the EC CNB Special. After the accident the Guard's hand brake of EC CNB Special was not in the applied condition.

5.7 (a) Shri A.K. Bhattacharjya (witness No. 20) TDI, Gomoh gave certain details of the accident.

(b) Answering questions he stated—

(i) Air brake handle was in applied position. Vacuum brake handle was in applied position but handle was broken, and as such it could not be stated if vacuum brake was applied or not. All other electrical controls were in energised condition except traction control which was in neutral position indicating traction power was off. Vacuum exhausters and compressors were in on position indicating that independent brake and vacuum brake were functioning. The synchronising valve was in normal position indicating that air brake was functioning in conjunction with vacuum brake. The hand brake was in cab No. 1 while the Driver was in cab No. 2.

(ii) Asked to explain how the train rolled when the air brake was on, he stated that vacuum brake was not applied in this case as otherwise the train would not have moved. A train with a load of 33 BOX wagons cannot be retained on 1 in 85 down gradient on air brake alone for any length of time. The position of the body of the driver indicated that the Driver had left the engine. The Driver should not have left the locomotive. He should have controlled by vacuum and air brakes and should not have left the loco on the graded section under any circumstances. In his opinion the cause of rolling was due to the Driver leaving the engine unmanned on steep gradient without taking adequate precautions.

5.8 (a) Shri A.R. Bhattacharjee (witness No. 25) TDI, Gomoh stated that late S.K. Sen was allotted under him as Driver from 1-3-1981. His performance as a Driver in Gomoh-Gaya Section was quite satisfactory.

(b) Answering questions he stated—

(i) On 13-7-1981 he travelled with S.K. Sen from Gomoh to Gaya by Goods train. His driving was satisfactory. He was a cautious driver and not addicted to drink.

(ii) Asked if it is possible to stop a train on air brake only on steep gradient he replied in the negative.

(iii) Asked to comment how the train rolled in this case he stated that vacuum brake was not applied.

(iv) Asked to comment if the accident would have been averted if the Driver was in the cab he replied in the affirmative. Action of the Driver in leaving the engine when the Assistant Driver was not there was a gross violation of rules.

VI. TESTS AND OBSERVATIONS

6.1 By the time I reached the site on 11-8-1981 through communication was already restored. With the help of sketches, photographs, clues and measurements preserved by the Railway I was able to reconstruct the scene of the accident adequately to establish the cause of the accident. No other tests were considered necessary.

6.2 Shri J. Bhattacharjee, Dy. CRS (S&T) conducted tests on signalling installations the results of which are given elsewhere in the report.

VII. DISCUSSION

7.1 Time of the accident

The time of the accident given by the Guard of the train and Switchman of Nathganj Block Hut as 4.43 hours is accepted.

7.2 The speed of the trains at the time of the accident

The speed of EC 445 Up at the time of the accident is accepted as 25 Km/h. The speed of EC CNB Special at the time of the accident as estimated by Shri A.K. Chakraborty (witness No. 6) as 120 Km/h is accepted.

7.3 Cause of the accident

There is clear evidence to show that collision took place between EC CNB Special Up goods train and EC 445 Up Goods train at Km. 422/7-9 opposite Yadugram Block Hut Station. The Switchman of Yadugram Block Hut and Shri A. K. Chakraborty, Safety Counsellor (C&W) are eye witnesses to the accident. The evidence of Shri K. Kumar (witness No. 1) shows that the EC CNB Special Up Goods train stopped at Km. 412/37 on 1 in 85 Down grade near the Distant signal of Nathganj Block Hut which was showing yellow aspect as the relevant Home signal was showing red. The Assistant Driver was sent to check the vacuum which could not be restored to 50 cm from 42 cm. The Assistant Driver has clearly deposed that all the vacuum cylinder pistons were in bottom position indicating that the vacuum brake was not applied. The severed position of the body of the Driver clearly indicated that the Driver made the fatal mistake of leaving the engine on air brake only, came down the loco, and started inspecting inside probably to check oil in the gear case and gear case bolt. At this stage the train appears to have rolled and commenced its journey without anyone on the footplate. In covering the distance from 412/37 to Km. 422/7-9 the train picked up the run-away speed of 120 Km/h before the collision occurred. It is therefore concluded that the accident was due to the Driver of the train having left the locomotive unattended on a descending grade of 1 in 85 without taking proper precautions and without applying even the vacuum brake.

7.4 Responsibility of the Guard of EC CNB Special

The Guard of EC CNB Special cannot be held directly responsible for the accident. Nevertheless he was in a position to prevent the accident if he was vigilant and cautious. In the first instance when the train started from Km. 412/37 without exchange of signals with him, he should have become suspicious, instead he gave false evidence in the enquiry that somebody from the engine exchanged signals with him. He was again proved a liar in the enquiry when the DME (P) confronted him and stated that on the date of the accident the Guard had admitted to the DME(P) that he did not exchange signals with the Driver. I am unable to accept the view that the Driver could have exchanged signals when there was clearly nobody in the engine and the train was commencing its disastrous journey without any crew. The Guard having been caught in telling lies in the enquiry, no reliance can be placed on the evidence tendered by him. I am inclined to agree that he was not vigilant and did not see the gesticulations of the Switchman of Nathganj Block Hut or that of the Assistant Driver. I am also satisfied that the Guard did not apply the vacuum brake at the appropriate time. According to the evidence of witness No. 6, the hand brake of the Guard was not even applied. The Guard having been trapped in a number of false statements in the enquiry deserves no sympathy.

VIII. CONCLUSIONS

8.1 On careful consideration of the factual, material and circumstantial evidence, I have reached the conclusion that the collision of EGCNB Special with EC 445 Goods train at Km. 422/7-9 opposite Yadugram Block Hut Station on Gujhandi-Gurpa Section of Dhanbad Division of Eastern Railway at 4.43 hours on 3-8-1981 was due to the Driver of the train having left the locomotive unattended on a descending grade of 1 in 85 without taking proper precautions and without applying the vacuum brake. The loaded train which could not be retained on the graded section on air brake alone started rolling down, killing the Driver and causing the subsequent collision after gaining a run-away speed of 120 Km/h according to eye-witnesses.

8.2 Responsibility

(a) Late S.K. Sen, Driver of EC CNB Special is held solely responsible for the accident. He violated GR 141 and GR 417.

*(b) Shri S.M.A. Rahman, Guard of the train cannot be held responsible directly for the accident; nevertheless he was in a position to avert the accident or minimise the extent of damage by prompt application of vacuum brake. The Guard was neither vigilant nor cautious; and did not apply the vacuum brake promptly; he also did not apply the hand brake; instead he merely gave false evidence in the enquiry.

8.3 Service Record

(a) Late S.K. Sen was appointed on 19-9-1948 and was promoted to the category of Electric Driver on 12-6-1979. He had taken 36 hours rest at headquarters before he came on duty at 21.00 hours. He was last medically examined on 2-6-1981. He underwent last Refresher Course at Asansol from 16-11-1978 to 11-1-1979 and at Bhuli from 29-1-1979 to 6-3-1979. He also underwent Safety Camp training from 26-3-1979 to 31-3-1979. His increment was stopped for one year on 22-6-1981 for starting engine with load without creating vacuum as a result of which five wagons got derailed on 26-4-1980.

(b) Shri S.M.A. Rahman was appointed as Trains Clerk on 19-5-1956 and promoted to the category of Guard of 26-12-1966. He availed 40 hours rest before coming on duty. He was last medically examined on 6-1-1981. He underwent last Refresher Course on 18-4-1981 and last Safety Camp training on 30-3-1968. There are no punishments or awards in his service sheet.

8.4 Relief arrangements and medical attention

I am satisfied with the relief arrangements and medical attention given.

IX. REMARKS AND RECOMMENDATIONS

9.1 Pertaining to Electrical Department

(a) Electric Drivers of the Eastern Railway are known for their poor skill in trouble shooting. The Railway Administration may institute special drive for counselling of all electric drivers especially those with poor records and give them special course of instruction in trouble shooting.

9.2 Pertaining to Civil Engineering Department.

(a) Creep of over 6" was noticed at a number of places, At Km. 416 on the Down line, the creep was 14".

(b) The PWI was not aware of the Joint Procedure Office Order No. 1 dated 14-6-1980 which lays down the procedure for checking the infringements of implementation masts once a year.

9.3 Pertaining to Operation and Safety Departments

(a) The special instructions regarding movements of trains on Gujhandi-Gurpa graded section requires further clarification. It should be ensured that no goods train is allowed to enter between Dilwa and Gurpa till the passenger train ahead on the Up line reaches Paharpur when the Up Loop of Gurpa is occupied or till the Passenger train passes Up Advanced Starter of Gurpa and the Up Loop points of Gurpa set and locked towards the sand hump when the Up Loop is clear.

(b) Clocks at East & West Cabins at Gurpa station were out of order.

(c) Shri C.C. Mishra, ASM, Gurpa is overdue vision test.

(d) Shri N.G. Guha Thakurta, Relieving ASM and 8 Shuntmen are overdue Refresher Course at Gurpa.

(e) 28 Class III & 8 Class IV staff are overdue vision test at Gomoh. 66 Guards, 10 ASMs & 11 AYMs and 1 Shuntman are overdue Refresher Course at Gomoh.

*Since acquitted by the Court.

(f) 3 Class III staff at Gurpa are overdue Safety Camp training.

(g) 85 Guards, 8 ASMs, 12 AYMs & 50 Shuntmen are overdue Safety Camp training at Gomoh. Competency Register and Competency Certificates of staff at Gomoh were not available for inspection.

(h) The TI did not carry out inspection of station Gurpa during 1978 and 1979.

(i) No Officer inspected Gurpa Station during 1980.

(j) Guard of EC CNB Special did not carry a portable vacuum gauge and therefore had no means of checking the vacuum precisely at any state.

(k) Dilwa is shown as a Block Hut in the Working Time Table which appears to be a mistake.

9.4 Pertaining to Signalling Department

(a) 400 m. adequate distance for block release to be provided at the 4 Block Huts between Gujhandi and Gurpa.

(b) View of Up Home signal and its directional indicator at Gujhandi is obstructed by branches and OHE masts.

(c) Up Home signal of Dilwa station is not continuously visible due to the branches coming in the way.

(d) SM's control to be provided at all Block Stations between Gujhandi and Gurpa.

(e) Cross protection on track relays for cut section track circuits to be provided at all stations as per SEM 506.

(f) Veeder counter for resetting of axle counter is out of order at West Cabin of Gurpa Station.

(g) Holding to be provided for point No. 24W of Gurpa Station.

(h) There was no indication of Down Distant signal as the indication lamp at West Cabin was fused.

(i) Out of 90 line relays at Gurpa, 68 relays are overdue overhauling.

(j) Out of 16 line relays, 4 relays are overdue overhauling.

(k) Cable testing is not being done as per SEM 908 and 963.

Yours faithfully,

Sd/-

(K. Ganapati)
Commissioner of Railway Safety,
Eastern Circle, Calcutta.

RAILWAY BOARD'S VIEWS ON VARIOUS PARAS OF THE REPORT

Para 9.1: Attention of all concerned has been drawn by the Railway to ensure compliance of GR 141. The Railway Administration has also drawn up lists of General Rules on safety in operation as applicable to loco running staff and of safety items—for check and observations—for counselling the running staff on these items.

Para 9.2

(a) As advised by the Railway, the stretch of track lies on the Ghat section with steep gradients and sharp curvature. The incidence of creep is, therefore, high on this portion. With the provision of steel trough sleepers and pandrol clips, the Railway has been able to control the incidence of creep on the Up line. After gaining the experience on the Up line, similar action would be taken for the Down line also. In the meantime, all concerned have been advised to take precautions to have the creep under control.

(b) Instructions have been given by the Railway to ensure that the Joint Procedure Order is followed and proper records, as prescribed, are also kept.

Para 9.3

(a) The matter is under consideration.

(b) to (h) Necessary action has been taken by the Railway in this regard. Railway Administration is also being asked to indicate the reasons for which competency register and competency certificates of staff at Gomoh were not made available for inspection.

(i) The matter is under consideration.

(j) & (k) Suitable action has been taken by the Railway in the light of CRS's observations.

Para 9.4: (a) to (k) Necessary action has been taken/initiated by the Railway in compliance with CRS's observations. The Railway is being asked to take further action, as necessary, in the light of CCRS's remarks.

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