



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

## RAILWAY ACCIDENT INVESTIGATION

# REPORT

ON

Collision of Up DC Shuttle 3775 Goods train with 132 Down  
Patna-Gomoh passenger train between Karma Hat and  
Ranchi Road Stations of Eastern Railway on 14-6-81 .

## SUMMARY

Date . . . . .	14-6-1981
Time . . . . .	16.34 hours.
Railway . . . . .	Eastern.
Gauge . . . . .	B.G. (1676 mm).
Location . . . . .	Km. 86/5-6 between Karma Hat and Ranchi Road Stations of Dhanbad Division.
Nature of Accident . . . . .	Collision.
Trains involved . . . . .	(1) Up DC Shuttle 3775 Goods train consisting of 34 BOX wagons and one Match Truck hauled by WDM-2 Locomotive. (2) 132 Down Patna-Gomoh Passenger train consisting of two 4-wheelers and 9 coaches hauled by WG Locomotive.
Speed . . . . .	(1) Stationary (2) 15 Km/h.
System of Operation . . . . .	Absolute Block System.
Number of Track . . . . .	One.
Alignment . . . . .	$\frac{1}{2}^{\circ}$ right hand curve.
Gradient . . . . .	1 in 222 down.
Weather . . . . .	Clear.
Visibility . . . . .	Good.
Cost of Damages . . . . .	Rs. 1,90,000/-.
Casualty . . . . .	Killed 1 (Railway staff). Grievous injury 2 (Railway staff). Simple injury 8.
Relief Arrangements & Medical Attention.	Satisfactory.
Cause . . . . .	(1) Driver of Up DC Shuttle Goods train having passed Up Starter & Advanced Starter in the 'On' position due to weak brakepower thereby causing an obstruction in the next block section. (2) Failure of the crew of 132 Down to sight the obstruction in time and avert the collision even though adequate distance was available.
Persons held responsible . . . . .	Driver of Up DC Shuttle & Driver and First Fireman of 132 Down.

**Note :** Important and crucial paras have been italicized.

(25th Report of CRS -2nd of 1981-82)

(ii)

- Important Recommendations . . . . .
- (1) Fixed Warners should be converted into Working Warners (Para 9.1 c).
  - (2) Railway Administration to depute special staff for carrying out surprise inspection of brake-power of Coal Pilots at the commencement of open line section to give necessary guidance and counsel to the Drivers of Coal Pilots (Para 9.3 c)

**Abbreviations used in this Report**

DC . . . . .	Diesel Crack.
B. G. . . . .	Broad Gauge.
CRS . . . . .	Commissioner of Railway Safety.
CTSS . . . . .	Chief Traffic Safety Superintendent.
DRM . . . . .	Divisional Railway Manager.
ACE (T) . . . . .	Additional Chief Engineer (Track).
ACME (C & W) . . . . .	Additional Chief Mechanical Engineer (Carriage & Wagon).
ADRM (O) . . . . .	Additional Divisional Railway Manager (Operations).
ACSE . . . . .	Additional Chief Signal Engineer.
SDO . . . . .	Sub Divisional Officer.
OC/GRP . . . . .	Officer in charge/Government Railway Police.
ART . . . . .	Accident Relief Train.
ADMO . . . . .	Assistant Divisional Medical Officer.
SM . . . . .	Station Master.
ASM . . . . .	Assistant Station Master.
AOS (T) . . . . .	Assistant Operating Superintendent (Transportation).
AME . . . . .	Assistant Mechanical Engineer.
ASTE . . . . .	Assistant Signal & Telecommunication Engineer.
DSO . . . . .	Divisional Safety Officer.
DSTE . . . . .	Divisional Signal & Telecommunication Engineer.
Sr. DEN . . . . .	Senior Divisional Engineer.
Sr. DME . . . . .	Senior Divisional Mechanical Engineer.
ASO . . . . .	Assistant Security Officer.
DCS . . . . .	Divisional Commercial Superintendent.
MS . . . . .	Medical Superintendent.
ACS . . . . .	Assistant Commercial Superintendent.
SP . . . . .	Superintendent of Police.
TP . . . . .	Telegraph Post.
TTE . . . . .	Travelling Ticket Examiner.
ASI . . . . .	Assistant Sub-Inspector.
TI . . . . .	Traffic Inspector.
SI . . . . .	Signal Inspector.
LF . . . . .	Loco Foreman.
CWF . . . . .	Carriage & Wagon Foreman.
PWI . . . . .	Permanent Way Inspector.

**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 Up DC Shuttle 3775 Goods train with 132 Down Patna-Gomoh Passenger train at Km. 86/5-6 between Karma Hat and Ranchi Road Stations (Single line) on Gomoh-Barkakana Double/single line B.G. section of Dhanbad Division of Eastern Railway at about 16.34 hours on 14-6-1981.

**1.2 Inspection and Inquiry**

(a) I was on sanctioned earned leave from 1-6-1981 to 21-6-1981 and resumed on 22-6-1981. The charge of Eastern Circle during the leave period was with CRS/South Eastern Circle who did not notify an enquiry in the above case.

(b) On resumption from leave, in consultation with the Railway I inspected the site of the accident on 25-6-1981. I also visited the two injured passengers in Dhanbad Railway Hospital on 26-6-1981 and recorded their statements relevant to the cause of the accident.

(c) 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 Karma Hat Station on 25-6-1981 or communicate to me by post at the Calcutta address. The civil and police authorities were duly notified. The enquiry was continued at Dhanbad on 26-6-1981 and concluded on the same date. In the circumstances, it was not reasonably possible to hold the statutory enquiry earlier.

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

**Railway Officials**

1. Shri S.K. Basu, CTSS, Calcutta.
2. Shri M.D. Mathur, DRM, Dhanbad (on 26th only).
3. Shri M.D. Khattar ACE(T), Calcutta.
4. Shri L.K. Mathur, ACME (C&W), Calcutta.
5. Shri R.M. Das, ADRM (O), Dhanbad.
6. Shri G.N. Khanna, ACSE, Calcutta (on 25th only).

**Non-Railway Officials**

1. Shri S.D. Prasad, SDO (Sadar) Hazaribagh (on 25th only).
2. Shri Balram Singh, OC, GRP, Barkakana (on 25th only).

(e) The evidence of 25 persons was recorded in the enquiry. In addition evidence of 2 injured persons was recorded in Dhanbad Railway Hospital on 26-6-1981. In addition proforma and oral evidence were recorded as necessary. Relevant railway documents were also perused.

(f) In this report, the terms 'right', 'left', 'leading', 'trailing', 'front' and 'rear', where used, are in reference to the direction of movement of Up DC Shuttle Goods train.

### 1.3 The Accident

(a) On 14-6-1981, Up DC Shuttle 3775 Goods train consisting of WDM-2 loco hauling a trailing load of 34 BOX wagons and one Match Truck while entering Karma Hat Station on the Main Line on valid line clear and lowering of relevant signals *passed the Up Starter and the Advanced Starter in the 'On' position and came to a halt after passing the Down Outer signal of the station by a distance of 216'-6"*. Within a minute of the Up DC Shuttle Goods train coming to a stop, 132 Down Patna-Gomoh Passenger train which consisted of WG Loco hauling 2 four wheelers and 9 coaches and which was running on the block section from Ranchi Road to Karma Hat on valid line clear came and collided with the Up DC Shuttle Goods train. As a result of the collision the WG locomotive suffered minor damages but did not derail. Next to the train engine was a four-wheeler ER 38542 which was a Weighbridge Test Van, all 4 wheels of which derailed and the wagon was badly damaged and came to rest almost vertical to the ground. The 2nd coach of 132 Down was ER 6180 EVP which was a Weighbridge Rest van which derailed of all wheels and the body was smashed and the underframe badly twisted. The Ranchi Road end trolley of the 3rd coach was on rail while the Gomoh end trolley derailed of all wheels and was detached from the body and pierced into EVP 6180. The remaining coaches from 4 to 11 were on rail. All wheels on the Ranchi Road side of the Diesel Loco of the Up Goods train were hanging in the air and the body was resting on the front buffer beam of the steam loco. The Diesel loco suffered minor damages. Match Truck No. 481 which was immediately behind the Diesel Loco was completely smashed except that the Ranchi Road end wheel set was on rail. The CBC coupler and the end wall of the next BOX wagon was damaged but there was no derailment. There was no damage to the other wagons of the Up Goods train. There was no train parting of either trains.

(b) The weather was clear and the visibility was good under daylight condition. The speed of 132 Down train at the time of the accident has been estimated at 15 Km/h. The Up DC Shuttle Goods train was stationary.

(c) After the accident the Railway Officers ascertained that the brake-power of Up Goods train was only 42.4% and that of 132 Down was 81.2%.

### 1.4 Casualties

As a result of the accident, one Railway Servant (Fitter of Railway Weighbridge Organisation travelling in rest van 6180) was killed on the spot. Two other Railway Servants sustained grievous injury and 8 persons sustained simple injury.

## II RELIEF MEASURES

2.1 (a) The first information report about the accident to control was given by the ASM, Karma Hat Shri J.P. Yadav at 16.35 hours. Thereafter all concerned were informed and arrangements made for running of Medical Vans and Relief Trains. The Guard of 132 Down gave first aid to some injured passengers.

(b) ART/Barkakana with medical chest which was ordered at 16.40 hours, left Barkakana at 17.20 hours and reached the site of accident at 18.30 hours. The Medical Van of Gomoh which was ordered at 17.05 hours, left the station at 17.45 hours and reached the site at 21.38 hours.

(c) Dr. D. N. Mishra, ADMO/Barkakana arrived at site by ART at 18.30 hours. Dr. Pal, ADMO/Patratu also reached the site by road soon after, at 18.45 hours. Some local doctors also rendered medical aid at site. Two injured passengers were shifted to Tutijharna Civil Hospital, 3 kms. away and one passenger was shifted to Patratu Railway Hospital at about 19.00 hours by means of a private ambulance and Railway's Matador Van. Other injured passengers went on their own to Tutijharna Civil Hospital. Subsequently one injured railway servant from Tutijharna Civil Hospital and one from Patratu Railway Hospital were transferred by ambulance to the Dhanbad Railway Hospital. No surgical treatment was resorted to at site but stitching was done in one case and Morphine was injected in another case.

(d) The body of one Railway servant who died in the accident was removed from the site at 6.15 hours on 15-6-1981 by local police and sent to Dhanbad Hospital for post-mortem examination.

(e) No special arrangements were made for the uninjured passengers who reached Ranchi Road Station and dispersed by road.

(f) The Railway Administration made ex-gratia payment of Rs. 1000/- to the next of kin of 1 Railway Servant killed, Rs. 750/- to each of the persons who sustained grievous injury and Rs. 250/- to each of the persons who sustained simple injury.

## 2.2 Restoration and Interruption to traffic

(a) The ART/Barkakana which was ordered at 16.40 hours, reached the site at 18.30 hours. The 75 ton crane of Barwadih which was ordered at 17.00 hours, reached the site at 07.55 hours on 15-6-1981. ART, Buldozer and MFD Van of Gomoh which were ordered at 17.05 hours, left the station at 19.00 hours and arrived at Chainpur at 23.25 hours and were returned being not required 120 ton crane of Dhanbad which was ordered at 17.10 hours, left Dhanbad at 18.10 hours and arrived Chainpur at 0.19 hours on 15-6-1981. The MFD Van which was detached at Chainpur reached the accident site at 5.00 hours.

(b) The ADMO, AOS(T), AME, ASTE & GRP/Barkakana reached the site at 18.30 hours. The DRM, ADRM(O), DSO, DSTE(C), Sr. DEN, DEN(3), Sr. DME(C&W), ASO, Sr. DCS, MS, AME(P) & ACS reached the site at 22.45 hours. SP/Hazaribagh along with local police reached the site at 21.30 hours.

(c) Police clearance was given at 1.35 hours on 15-6-1981.

(d) Through communication was restored at 15.40 hours on 15-6-1981.

(e) As a result of the accident, 4 trains were cancelled and 2 trains were terminated short, and restarted.

## III. THE TRAINS

3.1 The Up Diesel Crack Shuttle 3775 Goods train was hauled by Diesel locomotive WDM-2 No. 17377 belonging to Patratu Shed. The loco was manufactured in DLW/Varanasi in 1973 and commissioned on 15-3-1973. The loco was provided with a headlight and speedometer in working condition. The loco was running with short hood leading. The length of the loco was 56' and its weight 113 tonnes and its braking force 86 tonnes. The loco was provided with dynamic brake, air brake, vacuum brake for the train and hand brake. The proportionate brake was also working. The loco underwent POH on 7-5-1979 after which it earned 1,82,586 Kms. The last trip inspection was done at Patratu Shed on 9-6-1981.

3.2 The trailing load of the Up Goods train consisted of one Match Truck and 34 BOX wagons out of which 32 were loaded and 2 were empty (14th & 25th). The total length of the train was 478 m., its weight 2716 tonnes and its braking force 1165 tonnes. The Goods train was fully vacuum braked. After the accident the brake power of the Goods train was found to be only 42.4% which will give a braking force of 494 tonnes.

3.3 The 132 Down Patna-Gomoh Passenger train was hauled by Steam Locomotive No. WG 8956 belonging to Gomoh Shed. The locomotive was manufactured in CLW/Chittaranjan but the date of commissioning was not available. The locomotive was provided with a headlight in working order but there was no speedometer. The locomotive was running engine foremost. The length of the loco was 78 ft., its weight 174 tonnes and brake force 59.6 tonnes. Steam brake has been provided for the engine and vacuum brake for the train. The locomotive underwent POH on 4-4-1981 after which it earned 6072 Kms. The last trip inspection was done at Gomoh on 6-6-1981. There was no synchronisation between vacuum and steam brakes.

3.4 The trailing load of 132 Down consisted of 2 four-wheelers and 9 coaches. The total length of the train was 216 m., its weight 425 tonnes and brake force 362 tonnes. The train was fully vacuum braked and provided at the rate of 2 cylinders per 8-wheeler coach and one cylinder per 4-wheeler coach. The brake power certificate issued by TXR/Barkakana showed 100% active cylinders, while after the accident the Railway Officers found only 13 cylinders were active out of 16 giving 81.2% brake power.

## 3.5 Cost of damage

Locomotive	Rs.	60,000/-
C & W	Rs.	1,25,000/-
Engineering	Rs.	5,000/-
		<hr/>
	Rs.	1,90,000/-

#### IV. LOCAL CONDITION

##### 4.1 The Section and the Site

(a) The accident occurred at Km. 86/5-6 between Karma Hat and Ranchi Road Stations (Single line) on Gomoh-Barkakana double/single line section of Dhanbad Division of Eastern Railway in the Civil district of Hazaribagh in Bihar State. The alignment at the site of accident runs from north to south. The country is undulating. The site of accident is on  $\frac{1}{4}^{\circ}$  right hand curve on 1 in 222 down grade. The site of accident is at the end of a cutting about 15 ft. deep. Soil is moorum. The ruling gradient of the section is 1 in 150 and the maximum permissible axle load is 19.0 tonnes.

(b) The permanent way consists of 90 RS rail, 36' long on CST-9 sleepers to N+1+D density. Adequate stone ballast has been provided.

(c) There was no monsoon patrolling/security patrolling in force at the site of the accident. There was no rainfall during the previous 7 days.

##### 4.2 Signalling

All stations on the section are equipped with Standard III interlocking to 'B' Class working except stations Telo, Bokaro Thermal and Amlo. The working time table however shows the standard of interlocking as I. The Warner Signals at the stations are kept fixed. Train working systems are double line between Gomoh and Chandrapura, single line between Chandrapura and Bhandaridah, twin single line between Bhandaridah and Jarangdih and single line between Jarangdih and Barkakana. Single line section between Chainpur and Barkakana is worked with tokenless block instruments and rest with single line Neals tablet instrument and the double line section with double line block instruments. Point H and signals at Karmahat are worked from end cabins and are directly interlocked in the lever frames at North and South Cabins. Karmahat is a two line station with a rail level platform on the loop line isolated from main line, towards the station building. The station is in 1/260 gradient falling towards Ranchi Road. Continuous steep falling gradient is existing in Up direction at both ends of the station. Due to curve and cutting on the approaches of the station at both ends visibility of Signals is not satisfactory. Advance Starters are interlocked with the Tokenless Kyosan make block instruments and provided with electric lever lock with normal check locking and are situated at North and South Cabins and operated by the Switchmen. The Starters are interlocked with the Advanced Starters and the 'one slot one starter' system is provided at the station. Main line starter automatic replacement is provided through Advanced Starter track. S.M.'s Control is provided for reception signals but not provided for the Advanced Starter Signals.

##### 4.3 Kilometrages

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

Gomoh	0.00 Km.
Chainpur	79.40 Km.
Karma Hat	84.20 Km.
Site of accident	86/5-6 Km.
Ranchi Road	91.60 Km.
Barkakana	100.62 Km.

There are 15 TPs per kilometre to the right of the track.

##### 4.4 Headquarters, System of working and Train speeds

(a) The Control office is situated at Barkakana and one Controller is in charge of the section from Gomoh to McCluskieganj. Trains are worked on the Absolute Block System by tokenless block instrument of Kyosan type.

(b) The maximum permissible speed of the section is 65 Km/h. There were no permanent or temporary speed restrictions in the vicinity of the site of the accident on that day.

## V. SUMMARY OF EVIDENCE

**5.1 (a) Shri N.M. Saha Roy** (witness No. 1) SM, Chainpur stated that Control informed at about 14.00 hours of 14-6-1981 that Down Chainpur Shuttle will come with 42 BOX empty and will clear the load of line No. 4 which consisted of 34 BOX wagons and one Match Truck. He instructed his Porter Shri Paras Mahato to make the load ready by fixing two Hose Pipes and four Rubber Washers which were deficient. The Porter completed the work before the arrival of the Down Shuttle. The Down Shuttle arrived Chainpur at 15.35 hours, engine reversed on load at 15.45 hours; Up train was ready at 16.15 hours and left Chainpur Station at 16.18 hours.

(b) Answering questions he stated—

(i) No train examination was done of the rake. The Porter was deputed with the Guard to check the continuity of vacuum. The Guard confirmed the continuity of the vacuum verbally. When the Driver gave the ready signal, the Starter was lowered.

(ii) *It is the job of the Driver to check the adequacy of brakepower on the rake. In this case in view of the accident he would say that the Driver should have asked for TXR's examination and committed an error of judgment in checking the brakepower.*

**5.2 (a) Shri Paras Mahato** (Witness No. 2) Porter, Chainpur Station stated that he checked the load and replaced two Hose Pipes and four Rubber Washers. The load was ready before the arrival of Down Chainpur Shuttle. The engine was detached and attached to the load on line No. 4 and he asked the Driver to create vacuum. He along with the Guard came upto the last vehicle rectifying vacuum leakages on the way. On reaching the last vehicle the Guard asked him to open the hose pipe of last vehicle to check the vacuum. On seeing the continuity in vacuum the Guard asked him to put the hose pipe on the dummy which was lone in the presence of the Guard. After that he went to the engine and asked the Driver whether his vacuum was ready. The Driver stated that the vacuum was ready and gave the whistle.

(b) Answering questions he stated—

(i) *The Driver or the Assistant Driver did not leave the engine to check the condition of cylinders on the rake. On his trip up and down the rake he did not find any pistons in raised condition. All load box handles were in loaded position.*

(ii) *Many Drivers destroy vacuum and go along the train to count the active cylinders but some Drivers do not do this work. In the present case such check was not done to the best of his knowledge since no piston was in raised condition.*

**5.3 (a) Shri Jhaboo Mahato** (witness No. 3) Switchman of North Cabin, Karma Hat stated that line clear for DC Shuttle was asked by Chainpur at 16.04 hours and granted at 16.06 hours. The train left Chainpur at 16.22 hours. The train was to be received on the Main line and Outer & Home signals were lowered at 16.24 hours. The train passed his Cabin at a very high speed. He asked the ASM if the train was to run through to Ranchi Road to which the ASM replied that the train was to stop for crossing of 132 Down Passenger. The train passed his Cabin at 16.25 hours. He gave TOS to Chainpur at 16.26 hours. *On enquiry the ASM stated that the Goods train passed the Starter and Advanced Starter in the 'On' position and stopped near the Down Outer signals.* At about 16.45 hours the Switchman of South Cabin was running towards the North Cabin. The Switchman of the South Cabin explained that an accident took place between the Up and Down trains near the Down Outer signal. He locked the cabin and went away to avoid assault by the furious passengers.

(b) Answering questions he stated—

The weather was clear and the visibility was good. The speed of the Up DC Shuttle while passing his Cabin was so high that it could not have stopped at the station. *The speed was even more than the speed of the running through goods trains. There was no indication that the Driver was checking the speed.* He did not make any attempt to stop the train except informing the ASM that the speed was high.

**5.4 Shri S.J. Minz** (witness No. 4) ASM, Ranchi Road stated that 132 Down Passenger train arrived Ranchi Road at 16.15 hours and left at 16.20 hours on proper line clear. After 20 minutes the Controller informed him at 16.40 hours that Up DC Shuttle disregarded Starter signals of Karma Hat and collided with 132 Down. He then informed all the local doctors.



5.5 (a) **Shri P.P. Pandey** (witness No. 7) Driver of 132 Down stated that his train arrived Ranchi Road at 16.13 hours and left at 16.19 hours. While negotiating curve near Karma Hat, his First Fireman warned him to stop short of the Outer signal which was at danger. Immediately he applied vacuum to bring his train to a stop. While approaching the Outer signal he saw one Up Diesel train approaching towards him. He applied full vacuum and steam brakes to stop his train by which time the Up train collided with his train. As a result of the collision he and his two firemen fell down on the footplate. When passengers rushed towards the engine shouting 'Maro Maro' he fled away from the site.

(b) Answering questions he stated—

(i) The brakepower certificate issued to his train showed as under:—

Engine No. 8956

Train No. 132

Date 14-6-1981

Attached at 15.45 hours

Vacuum ready at 15.55 hours

Load 11 = 20

Active 20

Vacuum on engine 45 cm

Vacuum on brake 43 cm

Sd/Driver

Sd/Guard

Sd/-TXR/Barkakana.

(ii) There was no difficulty with the brakepower of his train.

(iii) There was no speedometer on the engine. The speed of his train at the time of collision was 5 to 6 Km/h. Steam and vacuum brakes were working independently.

(iv) He cannot estimate the speed of the goods train. He did not see the Guard of the Goods train running ahead of the Goods train showing red flag. At this stage the Guard of Goods train Shri N. Dubey was confronted. *The Guard maintained that he was running ahead of the Goods train showing red hand signal while the Driver maintained that the Guard was not seen anywhere ahead of the Goods engine.*

(v) The speed of his train was about 15 Km/h when the Goods train was sighted at a distance of 70 m away. He could bring his train to a stop in a distance of 40 m. while travelling at 15 Km/h.

(vi) *When asked that the visibility trials showed that the Goods train was visible for a distance of 340 m. and that there should have been no difficulty to bring his train to a stop if he was running at 15 Km/h, he replied that the obstruction was visible only from a distance of 70 m. and it was not possible to stop the train as the Goods train was also moving.*

5.6 **Shri Md. Idris Ansari** (witness No. 8) Fireman of 132 Down more or less corroborated the evidence of the Driver (witness No. 7).

5.7 (a) **Shri B.C. Mishra** (witness No. 10) Guard of 132 Down gave certain details of the load of his train. His train arrived Ranchi Road at 16.13 hours and left at 16.19 hours on proper signal. While approaching Karma Hat the Driver checked the speed when he peeped out and saw that the Outer signal was in the 'On' position. Immediately thereafter he felt a heavy jerk and fell down inside the brakevan. He then got down and went towards the engine and found that his train had collided with the Up Goods train. He gave first aid to some of the injured passengers.

(b) Answering question he stated—

There was only one Fire Extinguisher in the brakevan. The weather was clear and visibility was good. Speed of his train at the time of the accident was about 10 Km/h. He did not know if the Up Goods train was moving or stationary at the time of the accident. The accident happened at 16.34 hours. He informed Control at 17.00 hours from the portable control phone at site. He gave first aid to 4 or 5 people.

**5.8 (a) Shri C.R. Mahato** (witness No. 11) Driver of Up DC Shuttle stated that he came on duty at 10.15 hours on 14-6-1981 and took charge of the engine at Patratu Station. His train left Patratu at 13.45 hours for Chainpur. His train arrived Chainpur at 15.15 hours. The engine was detached from the empty load and was attached to a load at 15.30 hours. The vacuum was ready at 16.00 hours and signal was given at 16.10 hours. His train left Chainpur at 16.15 hours. The Outer and Home signals of Karma Hat were found lowered. After passing the Home signal the Starter was seen in the 'On' position. He immediately applied vacuum brake, dynamic brake, independent brake and hand brake. His train stopped after passing Down Outer signal at 16.45 hours. He saw the smoke of an engine ahead and told the Guard and Diesel Assistant to protect the train. They left the engine to protect the train. In the meantime 132 Down Passenger came and collided with his train. All the passengers were rushing towards him and finding no other alternative he ran away to Ranchi Road.

(b) Answering questions he stated—

(i) *Before leaving Chainpur he checked the brakepower of the train on the first 12 wagons. Out of 24 cylinders on the first 12 wagons only 8 to 10 were active. In the meantime the Guard came from the rear and said that the vacuum and brakepower on the remaining portion of the train was O. K. Therefore he returned and started the train. When asked whether the Guard specifically told him if the Guard had checked the cylinders on the remaining portion of the train the Driver replied that the Guard merely said that the Guard had checked on the rear side of the train which was all right. At this stage the Guard of the train Shri N. Dubey was confronted. Shri Dubey denied having met the Driver of the train on the way. He denied having told the Driver that the rear portion of the train was O.K. The Guard also stated that he had asked the Driver if the Driver had checked the cylinders to which the Driver replied in the affirmative and the load was fit to go. The Guard further stated that there was no sign of vacuum being dropped and check for active cylinders. At this stage Shri Paras Mahato, Porter (witness No. 2) was confronted. The Porter stated that the Driver did not leave the engine at any time and vacuum was not dropped to enable active cylinders to be counted. The Driver maintained that he checked the active cylinders on the first 12 wagons of the train but did not check on the remaining portion of the train.*

(ii) *Soon after leaving Chainpur he applied vacuum brake but the train did not slow down. On reaching the Up Outer signal of Karma Hat he applied all the brakes.*

(iii) *He passed the Up Home signal of Karma Hat at a speed of 40 Km/h.*

(iv) *132 Down was not visible when his train stopped. It came after about 3 minutes. Speed at the time of collision would be 25 Km/h for 132 Down.*

(v) *He had been working on this section for 7 years as Driver and 8 years as Fireman. He was fully familiar with the section.*

**5.9 (a) Shri B.L. Hazam** (witness No. 12) Diesel Assistant of Up DC Shuttle train more or less corroborated the statement of the Driver (witness No. 11).

(b) Answering questions he stated—

(i) *The Driver dropped vacuum at Chainpur and went checking the wagons but he could not say if he checked all the wagons. On his return his Driver stated that vacuum was all right and therefore the train was started.*

(ii) *Speed of 132 Down at the time of collision was about 25 Km/h.*

(iii) *At the time of collision he was on the ground running towards 132 Down with red flag in hand on the left side i.e. on the Driver's side of 132 Down.*

(iv) *The Driver tested the brakes after leaving Chainpur but there was no effect.*

**5.10 (a) Shri N. Dubey** (witness No. 13) Guard of Up DC Shuttle stated that the engine was attached to the load at Chainpur at 15.40 hours. He and the Station Porter checked the load for coupling and hose pipe. After vacuum was ready the Driver gave the whistle to start the train at 16.12 hours. The Departure signals were lowered at 16.14 hours and the train left Chainpur at 16.15 hours. As the train was going with the last vehicle, he gave the last vehicle number to the SM on duty and came to the engine. The Driver stated that he had checked the load and the train could go. While approaching Karma Hat Station he noticed that the Outer and the Home signals were lowered for the Main line. When the train was crossing the Warning Board the Diesel Assistant advised the Driver to control the speed but the Driver did not

take any action. After crossing the Cabin the Assistant Driver sighting the red aspect of the Starter shouted that the Starter signal was at danger on which the Driver applied vacuum brake and the Assistant applied emergency brake. The train however passed Starter and Advanced Starter signals in the 'On' position and came to a stop after passing Down Outer signal. Immediately he got down from the engine and ran towards Ranchi Road Station showing red signal to warn the approaching train but unfortunately the Driver of 132 Down did not take notice of the danger signal shown by him and collided with the engine of Up DC Shuttle.

(b) Answering questions he stated—

(i) He ensured continuity of vacuum on the rake at Chainpur. He asked the Driver if the brakepower was adequate to which the Driver replied that the train was fit to go. Thereafter the Driver gave a long whistle and Departure signals were taken off for the train. As long as he was with the load no piston was in raised condition and the vacuum was not dropped. He went to the Station to give the last vehicle number and reached the engine by which time the train started.

(ii) In this period the Driver could not have dropped the vacuum and counted the active cylinders. Since the Driver told him that the brakepower was all right he accepted the Driver's version.

(iii) After stoppage of the train he saw 132 Down at about 300 m. in front. He therefore ran on the right side i.e. on the Fireman's side of 132 Down showing red hand signal. The train collided with the Goods train at a speed of 25 Km/h. The first report to the Control about the accident was given by him at 16.45 hours at Karma Hat Station. He was about 60 m. ahead of his train when 132 Down passed. The speed of 132 Down was at that time about 25 Km/h. The speed was somewhat reduced at the time of collision but would be 20 to 25 Km/h. He did not give first aid as passengers were shouting 'Maro Maro'.

5.11 (a) Shri R.D. Lall (witness No. 16) Courier Clerk of Coal Area Superintendent, Dhanbad stated that he was a passenger of the illfated 132 Down travelling in a second class coach near the brakevan. After the collision he was thrown in the compartment and got injured. He was brought down by fellow passengers. He was given first aid and shifted to Barkakana.

(b) Answering questions he stated—

The speed of 132 Down at the time of collision was about 20 Km/h.

5.12 (a) Shri J. P. Yadava (witness No. 18) ASM, Karma Hat stated that line clear was granted for Up DC Shuttle from Chainpur at 16.05 hours. Control also permitted granting of line clear to 132 Down Passenger and arranged crossing with Up DC Shuttle at Karma Hat Station. Accordingly he granted permission under exchange of private numbers with Switchman of South Cabin at 16.15 hours. Signals were lowered for receiving the Up DC Shuttle on the Main line. While the North Cabin Switchman was giving last vehicle number of Up DC Shuttle, the Up train passed the Down Advanced Starter. At this very moment South Cabin Switchman also informed that Passenger train had left Ranchi Road. In the meantime North Cabin Switchman informed that Up DC Shuttle was coming at a high speed. He immediately came out and tried to attract the attention of the Driver by raising both hands and shouting. The Driver acknowledged the signal and informed that he was not in a position to control the train. He advised South Cabin to show danger hand signal. The train passed the station at 16.28 hours at a speed of 40 Km/h, disregarding the Up Starter and Advanced Starter in the 'On' position. The Switchman of South Cabin stated that the Up train was controlled and that the Down train was coming. After few seconds collision took place at about 16.34 hours. He immediately informed Section Controller, Barkakana and asked for relief arrangements.

(b) Answering questions he stated—

Switchman of South Cabin told him that the Up Goods train stopped first and the accident occurred afterwards. First information report to the Control was given at 16.35 hours based on the information given by the South Cabin. The speed of the train while passing the station was 40 Km/h. The weather was good and the visibility was clear. There were no local doctors at that station. Asked why he allowed the Down train to stop at the Outer when the SWR prohibits the stoppage of Down train outside signal, the ASM stated that

if the Up Goods train had stopped at the proper place there was sufficient time to lower the signals for the Down train and therefore the crossing of 132 Down with the Up Goods train was correctly arranged at this station. The inability of the Up Goods train to stop at the station prevented the lowering of the signals for 132 Down.

5.13 (a) Shri R.C. Mahato (witness No. 27) Switchman, South Cabin stated that the Up Goods train passed the Up Starter and Up Advanced Starter in the 'On' position at high speed and came to a stop after passing the Down Outer. Thereafter the collision occurred. He showed red flag signal and shouted to the Driver and the Guard on the engine but the Driver did not stop.

(b) Answering questions he stated—

*The sound of collision was heard after the Goods train stopped and therefore he concluded that the Goods train stopped before the collision.*

## VI. TESTS AND OBSERVATIONS

6.1 By the time I reached the site on 25-6-1981 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.

6.2 On 18-6-1981, a brake test was conducted by Railway, on a Diesel Locomotive hauling 34 BOX wagons with 42% brakepower and 50 cm vacuum. The speed of the train was kept at 60 Km/h. As soon as the Up Starter signal was sighted emergency application of brakes including application of independent brake was made. The train stopped after passing the Down Outer signal by a distance of 1 Km.

6.3 Visibility test conducted by the Railway Officials indicated that the Down Outer signal was visible from a distance of 428 m. while the Up Main line Starter was visible at a distance of 645 m..

6.4 A visibility trial was conducted on 25-6-1981 in my presence under simulated conditions. A diesel locomotive was kept stationary at the site of the accident and approaching the same from a WG locomotive (simulating 132 Down) it was seen that the Diesel locomotive was clearly visible as under:—

*From Fireman side at 330 m.*

*On Driver side at 220 m.*

6.5 Shri J. Bhattacharjee, Dy. CRS (S & T) conducted tests on the signalling installations at Karma Hat Station, 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 132 Down as 16.34 hours is accepted.

### 7.2 Speed of the trains at the time of the Accident

The available evidence indicated that the Up DC Shuttle was stationary at the time of the collision. Considering the evidence given by the public and the Guard and Driver of 132 Down and the extent of damage, it is estimated that the speed of 132 Down at the time of the collision was about 15 Km/h.

### 7.3 Cause of the Accident

There is clear evidence to indicate that the Driver of Up DC Shuttle Goods train passed the Up Main Line Starter and Advanced Starter of Karma Hat Station and came to a halt after passing the Down Outer signal of the Station by a distance of 216 ft. 6 in. thereby causing an obstruction in the block section Ranchi Road to Karma Hat. The Railway officials found after the accident that the brakepower of the Up DC Shuttle was only 42.4%. The evidence of the Guard of the train (witness No. 13) and the Porter (witness No. 2) indicated that the Driver of the train did not check the brakepower of the Goods train by destroying vacuum and counting the active cylinders. The trials carried out (para 6.4) clearly indicated

that the obstruction was visible to the Driver of 132 Down at a distance of 220 m. and to the Fireman of 132 Down at a distance of 330 m. The Down Outer signal of Karma Hat Station which was in the 'On' position for 132 Down was visible at a distance of 428 m. (362 m. from the site of collision). There is clear evidence to show that the collision took place between 132 Down and the Up DC Shuttle Goods in the block section. It is therefore concluded that the cause of the accident was due to the combination of the following:—

(a) Driver of Up DC Shuttle Goods having passed the Up Starter and Advanced Starter of Karma Hat in the 'On' position due to weak brakepower (42.4%) and coming to a stop after passing a distance of 216'—6" beyond the Down Outer signal thereby causing an obstruction in the block section Karma Hat to Ranchi Road.

(b) Failure of the crew of 132 Down Passenger to sight the obstruction in time and avert the collision even though adequate distance was available to them to control the train after having sighted the obstruction which was visible from a distance of 330 m. from the Fireman's side and 220 m. from the Driver's side.

#### 7.4 Responsibility of the crew of 132 Down

It is accepted that 132 Down was travelling in the block section under valid line clear. With a view to see whether the crew was vigilant and cautious and could have stopped short of the obstruction thereby avoiding the collision, a visibility trial was conducted on 25-6-1981 under simulated conditions. The obstruction viz. the Diesel locomotive was clearly visible on the Fireman side at a distance of 330 m. and on the Driver side at a distance of 220 m. In addition the Down Outer Signal was already in the 'On' position for this train and the same was visible at a distance of 428 m. (362 metres from the site of collision). The crew admitted that they were proceeding at a slow speed of 10 Km/h or even less. Under the circumstances it was very easy for them to stop the train short of collision. The very fact that they failed to do so showed that both the Driver and the First Fireman of 132 Down were not vigilant and cautious.

#### 7.5 Responsibility of the Driver of Up DC Shuttle Goods

Under the rules for Coal Pilot Working the Driver of the train is to satisfy himself that he is in a position to control the train, therebeing no train examination of the Coal Pilot loads. If the brakepower was inadequate nothing prevented the Driver from refusing to take the load. The evidence of the Guard of the train (witness No. 13) and the Porter (witness No. 2) clearly indicated that the Driver of the Up DC Shuttle Goods did not destroy vacuum and count the active cylinders. The Driver merely checked the continuity of vacuum and started the train. The Driver admitted in evidence that soon after leaving Chainpur he applied vacuum brakes but found no effect. This was also confirmed by the Diesel Assistant (witness No. 12). With this background the Driver should have regulated the speed of the train and brought it to a safe halt at Karma Hat Station or earlier. Sufficient distance was available to him from Chainpur (Km. 79.4) to Karma Hat (Km. 84.20) to bring the train to a stop averting the collision. The very fact that the Driver did not do so only shows that he was not responsible. A perusal of his service record only confirms the above view.

### VIII. CONCLUSIONS

8.1 On careful consideration of the factual, material and circumstantial evidence, I have reached the Conclusion that the Collision of Up DC Shuttle 3775 Goods train with 132 Down Patna-Gomoh Passenger train at Km. 86/5-6 between Karma Hat and Ranchi Road Stations (single line) of Gomoh-Barkakana Double/Single Line Section in Dhanbad Division of Eastern Railway at 16.34 hours on 14-6-1981 was caused due to the combination of the following circumstances:—

(a) Driver of Up DC Shuttle Goods train having passed the Up Starter and Advanced Starter in the 'On' position due to weak brakepower (42.4%) and coming to a stop after passing a distance of 216'—6" beyond the Down Outer signal thereby causing an obstruction in the block section Karma Hat to Ranchi Road.

(b) Failure of the crew of 132 Down Passenger train to sight the obstruction in time and avert the collision even though adequate distance was available to them to control the train after having sighted the obstruction which was visible from a distance of 330 m. from the Fireman

side and 220 m. from the Driver side. In addition at a distance of 428 m. from the Down Outer Signal (362 metres from the site of collision) the crew had a warning that the Down Outer Signal was in the 'On' position.

### 8.2 Responsibility

(a) Shri C. R. Mahato, Driver of the Up DC Shuttle, Shri P.P. Pandey, Driver of 132 Down and Shri Md. Idris Ansari, First Fireman of 132 Down are held individually and collectively responsible for the accident. After considering the evidence I do not hold Shri B. L. Hazam, Diesel Assistant of the Up DC Shuttle Goods train responsible for the accident. The specific lapses and violation of rules are given below:—

Lapse	Persons	Violation of Rules
Failure to check the brakepower of the train at Chainpur.	Shri C.R. Mahato, Driver.	Coal Pilot Working Rules.
Failure to control the train when it was known that the brakepower of the train was poor soon after leaving Chainpur.	Shri C.R. Mahato, Driver.	G. R. 76.
Passing Up Starter and Advanced Starter of Karma Hat Station in the 'On' position.	Shri C.R. Mahato, Driver.	G. R. 79.
Failure to sight the obstruction in time and stop short of collision.	Shri P.P. Pandey, Driver and Shri Md. Idris Ansari, First Fireman of 132 Down.	G. R. 122.

### 8.3 Service Record

(a) Shri C. R. Mahato born on 9-11-1929 was appointed on 17-4-1950 as a Temporary Cleaner. He was promoted to Driver Grade 'C' on 4-4-1974. He passed last Vision Test on 24-1-1981. He was removed from service with effect from 15-3-1965 for derailment of 1173 Up Goods train on 29-2-1964. The removal notice was cancelled by DS/Dhanbad on appeal. He was again removed for absconding from the Rest Van of 1173 Up on 3-4-1964 but the same was cancelled as per Court's order. He was reduced in rank for 6 months from 18-8-1963 for refusal of duty on 19-12-1962, for not being found on 1-12-1962, 6-12-1962, 16-11-1962 and turning up late on 22-11-1962. His increment was stopped for 6 months for stalling his train on 9-8-1962. His increment was again stopped for 6 months for not being found on 6-8-1962 and 28-8-1962. His increment was again stopped for one year on 18-2-1975. His increment was again withheld for one year on 26-3-1976. The next increment was stopped for one year on 18-4-1977. His increment was stopped again for one year on 31-8-1977 for Lead plug fusion.

(b) Shri P. P. Pandey born on 3-10-1928 was appointed on 12-12-1947 as Temporary Cleaner. He passed last Vision Test on 3-3-1981. He was promoted to Driver Grade 'C' on 23-4-1958, as Driver Grade 'B' on 1-11-1975 and promoted to Grade 'A' on 24-6-1980. There are no punishments after 1962.

(c) Shri Md. Idris Ansari was appointed on 5-1-1965 and promoted as First Fireman on 3-5-1979. He passed the last Vision Test on 21-8-1978. There are no punishments in his service record.

### 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 Signalling Department

(a) The visibility of Up and Down Outer signals at Karma Hat Station was only 400 m. and 428 m. respectively. Since there appears no possibility of improving the visibility the Railway may impose a suitable restriction of speed on the approach to the Outer signals.

(b) SM's control for Advanced Starters should be provided. The position was made worse in that the existing SM's controls on Advanced Starters were removed at the time of installation of tokenless block instruments, which was clearly a retrograde step.

(c) Two track relays and 8 line relays are overdue overhauling.

(d) There were 61 failures of tokenless block instrument at the station during the last one year out of which 31 failures were due to mal-operation of instrument. Railway may take suitable action to educate Switchmen in correct operation.

(e) The maximum speed on the section is 65 Km/h. Stations are interlocked to Standard III but shown as Standard I in the Working Time Table. Warners have been fixed. The provision of fixed Warners does not enhance safety; on the other hand it is likely to confuse the Driver leading to accidents. Railway may take action to convert the fixed Warners at this station and at other stations on the section into working Warners. There is not much points in providing fixed Warners at stations where majority of trains run through.

### 9.2 Pertaining to Operating and Safety Departments

(a) The marshalling of non-AT SLR 5179 outside an AT coach as last vehicle of 132 Down violates standard marshalling order.

(b) Appendix B and C were not connected with the Station Working Rules of Karma Hat Station which are required to be studied by the station staff.

(c) Shri Ram Jatan, Switchman is overdue Refresher Course.

(d) Shri J. P. Yadav, ASM is overdue Vision Test.

(e) Officers did not inspect the station during 1978, 1979 and 1980.

(f) There are no clocks at North and South Cabins.

(g) The Traffic Inspector has not been inspecting the station regularly every quarter.

(h) Antiseptic cream and scissors were not found in the first-aid box which was last signed by the AMO in 1976.

### 9.3 Pertaining to Mechanical Department

(a) The Brake Power Certificate issued by TXR/Barkakana for 132 Down showed 100% active cylinders. After the accident the officers found 13 cylinders were active out of 16 and of the remaining 3, two were converted train pipe. Evidently the BPC issued by TXR/Barkakana was false for which the Railway may take up with the TXR.

(b) There was no speedometer on loco No. WG 8956 belonging to Gomoh Shed which hauled 132 Down Passenger. There was also no synchronisation between vacuum and steam brakes.

(c) The present accident was caused due to the failure of an individual driver rather than failure of the system of working. A perusal of the service record of the driver of Up DC Shuttle Goods train more than confirms this. The existing practice evolved over a period of years based on experience has been found satisfactory until the present accident was caused due to the failure of an individual. Nevertheless it is seen that the loaded Coal Pilots are allowed to run on the open line without examination by TXR but on the satisfaction of adequate brake power by the driver. It is necessary to learn some lesson from the present accident and also provide some additional safeguard to the travelling public on the open line against the recurrence of the similar type of accident by reckless drivers. Railway Administration may depute special staff as a regular measure in rotation for carrying out surprise inspection of the brake power of the Coal Pilots at the commencement of the open line section in order to check the brake power of Coal Pilots, give necessary guidance and counsel to the drivers of Coal Pilots. Railway may take such other remedial measures as may be necessary based on the results of the surprise inspections.

Yours faithfully,

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

### RAILWAY BOARD'S COMMENTS ON VARIOUS PARAS OF THE REPORT

**Para 9.1 :** (a) In view of the stipulation contained in SR 32 of the Eastern Railway (relevant extracts enclosed) vis-a-vis provision of sighting-cum-warning boards at Karmahat station, imposition of speed restriction on approach to Outer signals is not necessary.

(b) Provision of S.M's control on Advanced Starter would be expedited by the Railway.

(c) The Railway is taking action to clear the arrears of overhauling of relays.

(d) This has been accepted by the Railway Administration for implementation.

(e) The Railway has proposed to remove the fixed Warners at all stations on Chandrapura to Barkakana section.

#### **Para 9.2 (a) to (h)**

Suitable action has been taken by the Railway in compliance with these observations.

**Para 9.3 :** (a) The Railway is taking action against the TXR for issuing perfunctory brake-power certificate.

(b) Disciplinary action would be taken against the staff considered blame worthy. All concerned have also been advised to ensure proper fitment of satisfactory maintenance of speedometers on the locomotives.

(c) A team of Safety Counsellors (loco, carriage & Wagon and traffic) has been constituted by the Railway to carry out surprise and random checks of the brakepower of Coal Pilots in Asansol and Dhanbad Divisions. Apart from giving guidance to Drivers and Guards on the spot, the team would furnish reports to the Divisions/Headquarters for further action. Other Railways running Coal Pilots have also been advised in the matter suitably.



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