



GOVERNMENT OF INDIA  
MINISTRY OF TRANSPORT  
(COMMISSION OF RAILWAY SAFETY)

# RAILWAY ACCIDENT INVESTIGATION

## REPORT

*ON*

## COLLISION

*Between*

**2 DSK Passenger and Stabled KF Special**

*At*

**PILKHANI STATION**

*OF*

**AMBALA—SAHARANPUR SECTION**

*ON*

**Delhi Division of Northern Railway**

*ON*

**24-7-81**

*Price :* *Inland* *Foreign*  
Rs. 17.90 P. £ 2.10, or 6\$ 45 Cents

## SUMMARY

1. Date — 24-7-1981.
2. Time — 12.45 hrs.
3. Railway — Northern.
4. Gauge — Broad Gauge (1676 mm).
5. Location — Pilkhani station on Delhi Division.
6. Nature of accident — Collision.
7. Trains involved — (i) Empty load of KF special.  
(ii) 2 DSK down passenger train.
8. Speed of trains — (i) Stationary.  
(ii) 18 kmph.
9. System of Operation — Absolute Block System with panel interlocking at the station.
10. Number of tracks — Four running lines.
11. Gradient — Level.
12. Alignment — Straight.
13. Weather — Clear.
14. Visibility — Normal.
15. Casualties — Injured 3 (grievous).
16. Cause — 2 DSK passenger train having been received on the occupied down loop line.  
(i) Station Master, Pilkhani.  
(ii) Driver of 2 DSK.  
(iii) Fireman of 2 DSK.  
(iv) Short-comings in station working arrangements.
17. Responsibility
18. Summary of recommendations — (i) Complete track-circuiting of station section upto the block clearance limit at panel interlocked stations to be expedited. No new works of panel interlocking to be programmed until this is done.  
(ii) Working arrangements at panel interlocked stations without complete track-circuiting to be reviewed to provide adequate transportation staff for compliance with rules in a practical manner to ensure safety.  
(iii) When loads are stabled on running lines, the points leading to the occupied line be cotter-bolted and the feed to the motor operated points be disconnected.  
(iv) Shifting of Advanced starter signals to 120 metres from the trailing point.  
(v) Station Masters to be made personally responsible for ensuring double locks on relay rooms and proper maintenance of record regarding entry of signal staff into the relay room.  
(vi) Early action to have position of 'B' & 'C' class level crossing gates normally 'Closed' to road traffic as per Railway Board's orders.

### **Abbreviation used in the Report**

<b>C.T.S.S.</b>	<b>: Chief Traffic Safety Superintendent.</b>
<b>D.R.M.</b>	<b>: Divisional Railway Manager.</b>
<b>D.E.N.</b>	<b>: Divisional Engineer.</b>
<b>A.E.N.</b>	<b>: Assistant Engineer.</b>
<b>P.W.I.</b>	<b>: Permanent Way Inspector.</b>
<b>S.M.</b>	<b>: Station Master.</b>
<b>A.S.M.</b>	<b>: Assistant Station Master.</b>
<b>E.S.M.</b>	<b>: Electric Signal Maintainer.</b>
<b>T.I.</b>	<b>: Traffic Inspector.</b>
<b>C.T.X.R.</b>	<b>: Chief Train Examiner.</b>
<b>H.T.X.R.</b>	<b>: Head Train Examiner.</b>
<b>T.X.R.</b>	<b>: Train Examiner.</b>
<b>G.R.</b>	<b>: General Rule.</b>
<b>S.R.</b>	<b>: Subsidiary Rule.</b>
<b>T.S.R.</b>	<b>: Train Signal Register.</b>

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

**From :** The Commissioner of Railway Safety,  
Northern Circle,  
Charbagh Railway Station,  
Lucknow-226 001.

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

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

Sir,

In accordance with Rule 4 of the Statutory Investigation into Railway Accident Rules, 1973 (issued by the Ministry of Tourism & Civil Aviation *vide* their Notification No.RS.13-T(8)/71 dated 19th April,1973), I have the honour to submit herewith my report on the collision of 2 DSK Passenger with Empty KF Stock Special stabled on the down loop line of Pilkhani station on Ambala-Saharanpur section of Delhi Division on the Northern Railway at about 12.45 hrs. on 24-7-1981.

#### 1.2. Inspection and Inquiry

1.2.1. I was advised about the accident at about 10.00 hrs. on 24-7-1981. The site of accident was inspected by me on 27-7-1981 in the company of Shri Brahma Swaroop, Chief Traffic Safety Superintendent, Shri S.L. Chandoke, Addl. Chief Signal and Tele. Communication Engineer, Shri M.S. Bhandari, Divisional Railway Manager, Delhi Division and other railway officers. The affected rolling stock was also inspected.

1.2.2. A press notification was issued inviting any member of the public having knowledge relating to the accident to give evidence at the inquiry or to communicate with me by post.

1.2.3. The Civil authorities were advised by the Railway about the inquiry which was held by me at Saharanpur on 27th and 28th July, 1981.

1.2.4. The following officers were present at the inquiry :—

- (i) Shri Brahma Swaroop, Chief Traffic Safety Superintendent, Northern Railway New Delhi (both days).
- (ii) Shri S.L. Chandoke, Addl. Chief Signal and Telecommunication Engineer, Northern Railway, New Delhi (both days).
- (iii) Shri N.S. Bhandari, Divisional Railway Manager, Northern Railway, New Delhi (on 27-7-1981).
- (iv) Shri M.K. Patni, Addl. Divl. Rly. Manager, Northern Railway, New Delhi (on 28-7-1981).

1.2.5. Shri Viswa Prakash, Dy. Commissioner of Railway Safety (S & T) assisted me at the inquiry. Other railway officers were also available.

1.2.6. The evidence of 19 witnesses was recorded.

- 1.2.7. (i) In this report, the terms 'right', 'left', 'leading', 'trailing', 'front' and 'rear' were used are with reference to the direction of travel of 2 DSK passenger *i.e.* from Ambala towards Saharanpur.
- (ii) The term '2 DSK' wherever used stands for 2 DSK Down passenger train which left Kalka for Delhi *via* Saharanpur on 24-7-1981.
- (iii) The term 'KF Special' wherever used refers to the load of down Empty KF Stock Special which was stabled on the down loop line No. 1 of Pilkhani station on 24-7-1981.

### 1.3. The Accident

1.3.1. The KF Special arrived Pilkhani at 08.40 hrs. on 24-7-1981 and was stabled on the down loop line No. 1 as instructed by the Control. Its power was detached and worked away. As Pilkhani has only two running lines in the down direction viz. down main and down loop, all subsequent down trains were passed *via* the down main line (line No. 2). Since the main line is a non-platform line, two gaps were left between different parts of the stabled load to enable passengers entraining/detraining from trains received on the down main line to cross over from and to the rail level platform of the down loop line.

1.3.2. After stabling the load on the down loop, two down trains passed Pilkhani *via* the down main line at 09.12 hrs. and 11.55 hrs. respectively. For the movement of 2 DSK, line clear was granted by the Station Master, Pilkhani to Sarsawa at 12.32 hrs. and the train left Sarsawa at 12.36 hrs. On arrival at Pilkhani, 2 DSK entered the occupied down loop line and collided with the rear of the stabled load. Consequent to the collision, some passengers who were crossing the down loop line through the gaps left in the stabled load to board 2 DSK suffered injuries.

1.3.3. According to the driver of 2 DSK, the reception signals were taken 'off' for his train to be received on the down main line and that he noticed the stabled load only when his train took the turn-out leading to the down loop line. In spite of his efforts to stop the train, 2 DSK collided with the stabled load. The collision resulted in slight damage to the engine and two coaches (third and fourth from the engine) of 2 DSK. The brakevan of the stabled load was badly smashed and another wagon (fourth from rear) suffered some damage.

1.3.4. The weather was cloudy but the visibility was clear at the time of the accident.

### 1.4. Casualties

1.4.1. As a result of the accident, three persons suffered grievous injuries and eleven suffered trivial injuries. All the injured were passengers who were to board 2 DSK at Pilkhani and got trapped in the gaps left in the stabled load for their passage from the platform to the down main line.

1.4.2. I visited the injured in the Civil Hospital at Saharanpur on 27-7-1981. They were receiving due care in the hospital.

### 1.5. Passenger occupation

It was estimated that 2 DSK was carrying about 640 passengers against a seating capacity of 470 passengers at the time of the accident.

## II. RELIEF MEASURES

### 2.1. Intimation

The first information about the accident was conveyed by Shri B.K. Kapoor, Area Officer, Northern Railway, Saharanpur from Pilkhani station on the control phone at 12.55 hrs. The control then advised all concerned.

### 2.2. Medical Attention

2.2.1. The Railway doctors from Saharanpur reached Pilkhani by the Medical Van at 13.55 hrs. The passengers having trivial injuries were given first aid and allowed to go. The grievously injured persons were removed to Saharanpur and admitted in the Civil Hospital by about 15.25 hrs.

2.2.2. *Ax-gratia* payment was arranged by the railway to passengers who suffered injuries.

### 2.3. Restoration

As a result of the accidents, 4 passenger trains were detained for varying periods at different stations. Through running was restored at 22.35 hrs. on 24-7-1981.

## III. COMPOSITION OF TRAINS AND DAMAGE

3.1. 2 DSK passenger train was hauled by a steam engine and had a load of seven coaches as detailed below :—

3.2. Engine No. 15069 WL, commissioned in December, 1967. The engine had its last POH at Lucknow on 1-7-1979 after which it had covered 116457 kilometres. It had its last IOH at Bhatinda on

18-6-1981 after which it had covered 9380 kilometres. No schedules were over due. The engine was provided with steam brakes on the engine and vacuum brakes on the tender and had a speedometre in working order.

### 3.3. Coaches

Position from engine	Coach No.	Type of coach	Year built	Return date
1.	NR 8986 GS	ICF (MAN type)	1963	10/81
2.	NR 1630 GS	IRS type	1961	3/82
3.	NR 9329 GSY	ICF (laminated spring)	1959	2/82
4.	NR 742 FC	ICF -do-	1959	1/82
5.	NR 4527 GS	IRS type	Not available	8/82
6.	NR 9443 GS	-do-	1960	12/81
7.	NR 5514 SLR	-do-	1951	12/81

Note.— All coaches except items 2 and 5 above were anti-telescopic.

3.4. The length and weight of the train excluding the engine were 151.16 metres and 310.20 tonnes respectively. The train was equipped with vacuum brakes with 13 effective cylinders out of 14 cylinders, giving a brake power of 92.9%.

3.5. *Empty KF Special load*, which was stabled on the loop line of Pilkhani, consisted of 61 four-wheeler wagons. The wagon particulars are not being indicated as they are not relevant to the accident.

### 3.6. Damage to rolling stock

3.6.1. Engine No. 15069 WL of 2 DSK suffered some damage to the cow-catcher, head light bracket, foot steps and hand rails.

#### 3.6.2. Coaches of 2 DSK

3.6.2.1. NR 9329 (third from engine) had its trailing end buffer head stock and sole bar bent. Damage was also caused to the floor, internal seats and walls.

3.6.2.2. NR 742 (4th from engine) had its trailing end sole bar bent with damage to the floor.

3.6.3. *Empty KF Special Brake van* No. CR 75253 (rear-most) was badly smashed and minor damage was caused to CR 88074 which was fourth from the rear.

3.6.4. Some CST-9 and wooden sleepers together with fittings were completely damaged. No damage was caused to any other railway installation.

3.6.5. The total cost of damage to railway property was roughly assessed as under:—

(i) Engine of 2 DSK	Rs. 4,150
(ii) Rolling stock of both trains	Rs. 55,000
(iii) Permanent way	Rs. 7,100

TOTAL Rs. 66,250

## IV. LOCAL FEATURES

4.1. The accident occurred at km. 188/15-16 on the down loop line of Pilkhani station on the Ambala-Saharanpur double line section. The railway alignment runs east-west and is level at the site of accident. The railway alignment is straight for a considerable distance on either side of the station.

4.2. The permanent way consists of 90 R rails of 1954, laid on CST-9 sleepers of 1959 with wooden sleepers at joints, and a sleeper density of (M+4). The main line is stone ballasted with a cushion of 200mm. The height of bank at the site of accident is about 0.60 metres.

4.3. The kilometrages of the stations referred to in the report as reckoned from Delhi are as under:—

	Kilometres
Saharanpur	180.79
Pilkhani	188.51
Site of accident	188/15-16
Sarsawa	194.08
Jagadhri	210.93
Ambala Cantt.	261.93

4.4. There are 15 to 16 telegraph posts in each kilometre.

4.5. Ambala-Saharanpur is a controlled section with the control office at Ambala Cantt. and the Divisional Headquarter at New Delhi.

4.6. Speed of trains

The maximum permissible speed for trains on the section is 100 kmph. The booked speed of 2 DSK is 65 kmph.

4.7. System of train working

4.7.1. The system of train working on the section is the Absolute Block System with SGE Type double line lock and block instruments located in the office of the Station Master on duty. Pilkhani is a 'B' class station interlocked to standard III and is provided with multiple aspect colour light signalling with panel interlocking.

4.7.2. There are 4 running lines at the station viz. Up main, Up loop, Down main and Down loop with rail level platforms adjacent to the Up and Down loop lines only. The point zones are track circuited but the running lines including the berthing portion is not track circuited. Two rail length track circuits have also been provided within the Home signals and ahead of the last stop signals for block control.

4.7.3. There is an interlocked 'C' class level crossing No. 90 located at km. 188/14-15 within the Up starter signals at the Ambala end. The normal position of gate is 'Open' to road traffic. When a train is to be received, the Station Master on duty advises the gateman to close the gate. After the gate is closed and locked, the gateman confirms this to the panel Station Master on duty under exchange of private numbers. The S.M. on duty then turns the gate switch on the panel board to the 'locked' position and a light indication appears on the panel board to confirm this. The reception signals for a train do not come 'OFF' unless the gate is closed and locked and the switch on the panel board is in the locked position.

4.7.4. The normal aspect of all signals is 'red' except Distant signals which are 'yellow' and have a 'P' marker. The aspects of running and shunt signals are repeated on the panel.

4.7.5. The point switches on the panel are rotary switches with 3 positions viz. 'N' (normal), 'R' (reverse) and 'C'. The point switches are to be turned to the N or R position only when required to be set individually. For movements for which the route is set by turning the signal switch and pressing the destination button, the point switches are required to be kept in the 'C' position.

4.7.6. The position of each individual point is indicated on the panel by a spot light corresponding to N or R position which indicates that the point is correctly set and locked in that position. When the point is not correctly set and locked, or is in the process of setting, or if detection fails, the corresponding spot white light for that point on the panel shall continue to flash. Normally, it takes 4 to 5 seconds for the point to set in the required position after the operation of the switch during which interval the point indication light on the panel remains flashing. A steady white light shall appear to indicate the normal or reverse position of the point only after it is correctly set and locked in that position.

4.7.7. The indication lights for the track circuited point zones on the panel are in the form of "strip lights" which are normally dark and not lit indicating that the concerned track is not occupied and no route has been set over it. These strip lights are lit 'white' when the route has been set for any movement over the track. When the track circuit fails, or the track is occupied, the concerned strips are lit 'red'. When a train moves over the track after the route is set, its movement must be watched by the SM on duty to see that the lights becomes 'red' when the track is occupied failing which the track circuit shall be considered to be defective.

4.7.8. Station Master's control switch having 2 positions *i.e.* Locked and Released, is provided on the panel to enable the SM on duty to lock the panel if he has to leave the panel room even for a short duration to prevent any unauthorised manipulation of the switches/buttons.

4.7.9. Every route has an entrance switch and an exit button. Before setting the route, all point switches should be in the 'C' position. For reception or departure of any train, the route is set by turning the entrance switch and pressing the exist button. On doing so, the concerned points on the route (including those in the over lap portions), which are not already set in the required position, start flashing indicating their movement to the required position. As soon as all the points on the route get set and locked in the required position, steady spot white lights appear against the point indications and the route in the track circuited point zones on the panel gets illuminated by a series of white strip lights. The signals also simultaneously assume the 'OFF' position.

4.7.10. As soon as the train being received passes the signal, it will turn red. As the train moves ahead and occupies the track circuited portion, the white strip lights progressively turns red indicating the onward movement of the train. As each track circuit is cleared by the train, white strip lights re-appear. After the train has been received, the SM on duty shall restore the signal switch to the normal position. On doing so, the white strip lights will disappear indicating that the route has been released. The SM can also put back the signal switch to normal as soon as the train passes the signal and it turns red. In such a case, when the train clears the track circuited portion the white strip light on the route will not re-appear and the route will be dark.

4.7.11. After a train has been received on any running line, the reception signals for receiving another train on the same line cannot be taken OFF unless the previous train (or part of the train), has moved forward to occupy and clear the track circuite beyond the trailing points.

4.7.12. For reception of a down train from Sarsawa, the SM on duty, after granting line clear, shall decide the line on which the train is to be received after ensuring by personal observation that the allotted line is clear and free from obstruction. He also instructs the gateman to close the level crossing No. 90. He then turns the signal switch No. 2 for the Down home signal and presses the route button No. A or B, depending upon whether the train is to be received on the Down loop line No. 1 or Down main line No. 2. The route then gets set and lights up as described above.

4.7.13. According to joint Operating and Signalling circular No. 256-Signal/0/SG/Corresp./000 dated 8-8-1979 issued by the Northern Railway (based on Railway Board letter No. 75/W/3/SG/8/1 dated 16-2-1979), at stations where the relay room is not manned round the clock by signal staff, it is required to be kept locked with double locks, one whose key remains in the custody of the SM and the other whose key remains with the ESM. The instructions also require a register to a be maintained by the SM on duty which is to be signed jointly by the SM and the ESM when the relay room is to be opened for entry of signal staff to carry out any work.

## V. SUMMARY OF EVIDENCE

5.1. *Shri Ilam Chand, Driver of 2 DSK* (witness No. 1) stated that he worked the train from Ambala Cantt. After a scheduled halt at Sarsawa, when approaching Pilkhani, he observed the distant signal showing green and the routing reception signal showing yellow lindicating reception on main line No. 2. As his train approached the turn out, he noticed that the train was entering the Down loop line No. 1 which was already occupied by a goods load. He applied the emergency brakes but could not avert the collision. The speed of his train was about 18 kmph. After the collision, he went to the station where he scrutinised the T.S.R. and noted that the entries indicated the intention to receive his train on the down main line (line No. 2). The brake power of his train was satisfactory and he had no difficulty in controlling the train enrout.

Answering questions, he stated that :—

5.1.1. There was never any occasion earlier when his train took a route other than the one for which the reception signals had been taken off;

5.1.2. He could observe the load stabled on the down loop line when he was only about one telegraph post short of the down home signal;

5.1.3. He could not physically see whether the points were set for the down main line or the loop line. He realised this only when the train took the turn out to enter the down loop line;



5.1.4. According to vacuum brake certificate No. 513188 issued by HTXR, Ambala Cantt., the engine had a vacuum of 45 cms.

5.1.5. There was no change in the signal aspect as he was approaching Pilkhani.

5.2. *Shri Om Prakash, Fireman of 2 DSK* (witness No. 2) generally corroborated what *Shri Ilam Chand*, the driver of his train had stated.

5.3. *Shri O.P. Sharma, Guard of 2 DSK* (witness No. 3) became aware of the accident after experiencing a heavy jerk as the train entered Pilkhani. On reaching the station, the S.M. told him that he had arranged reception of the train on the down main line (line No. 2), but as the train approached the down home signal, the point light on the panel board started flashing which perhaps diverted the train to the loop line No. 1.

Answering questions, he stated that :—

5.3.1. The driver of his train told him that the Distant signal was showing 'double yellow' and the Home signal was showing 'yellow' without the route indicator light (Q. No. 1);

5.3.2. His impression was that with Distant signal showing double yellow, the train can be received on the main line (Q. No. 2);

5.3.3. He himself did not notice the signal aspects when his train was approaching Pilkhani nor did he notice the indications on the panel, since the Area Officer, Saharanpur was already at the station.

5.4. *Shri Ram Krishna Sharma, Station Master, Sursawa* (witness No. 4), despatched 2 DSK on proper line clear from Pilkhani. When he contacted S.M. Pilkhani at about 12.55 hrs. to ascertain the position of the train, he came to know of the accident but the Station Master, Pilkhani, did not give any reply to his query as to the cause of the accident.

5.5. *Shri Harjit Rai, Electric Signal Maintainer, Pilkhani* (witness No. 5), who was on duty at Pilkhani station on the day of the accident, had gone to the bus stand at about 12.15 hrs. to get medicine from a local doctor for some eye trouble. He came to know of the accident on his return at about 13.15 hrs. To his query regarding the cause of the accident, the Station Master did not disclose anything.

Answering questions, he stated that :—

5.5.1. The relay room is provided with two locks, one whose key remains with the Station Master and the other whose key remains with him. For opening the relay room the locks are opened jointly and the particulars of the entry by the signal staff into the relay room are recorded in register maintained by the SM on duty:

5.5.2. Any defects in the signals or the panel are advised to him by the Station Master on duty through a memo. All such failures are recorded in the Signal Failure Register which remains in the custody of the Station Master on duty.

5.5.3. His khalasis did not advise him about any complaint having been received from the S.M. on duty regarding any defect in the panel prior to the accident while he was away.

5.6. *Shri R.P. Sharma, Station Master Pilkhani* (witness No. 7) received the KF Special on the Down loop line No. 1 and stabled the load as per instructions of the control. He had put the ferrule on push button 'A' of line No. 1. The reafter, he passed two down trains via the main line (No. 2) before granting line clear for 2 DSK. He arranged reception of 2 DSK on the main line and the Distant and Home signals cleared accordingly on the panel. He then got busy with selling tickets to the passengers of 2 DSK. While doing so, he observed the flashing indication for points on which he sent *Shri Chander Pal*, Pointsman to call the ESM on duty to rectify the same. S/*Shri Inder Pal* and *Inam*, Signal Khalasis entered the relay room and rectified the flashing indication for point No. 23. He then again took 'off' the reception signals and observed that the Distant signal turned green and the Home signal showed single yellow for reception on the Down main line (No. 2). He then again got busy with the sale of tickets. After the train passed the Home signal, it collided with the load stabled on the down loop line. The Area Officer Saharanpur, who was travelling by 2 DSK, rushed to the station and seized the records and also checked the panel indications.

Answering questions, he stated that :—

5.6.1. The register maintained for recording the entry of staff into the relay room remains in the custody of the ESM and the signal staff sometimes enter the relay room without proper entries being recorded in the register. The key of the lock of the relay room also remained with the ESM and the signal staff had free access to the relay room. He had, however, never made a report about this in writing to any supervisory official except verbally to the T.I. (Q. No. 1 to 3);

5.6.2. To a query as to what prevented him as the Station Master of the station to control the entry to the relay room by putting his own lock to ensure that no staff entered the room without the knowledge and permission of the S.M. on duty, he could not give any satisfactory reply except to state that since the lock was already being provided by the ESM; he did not provide his own lock;

5.6.3. Loads are stabled on the Down loop line about 15 to 20 times in a month and on the Up loop line about 10 times in a month. He did not, however, make any written report to the control or any supervisory official of the inconvenience caused to passengers or of the risk involved in stabling the loads on the platform line;

5.6.4. During the eight years that he had been at Pilkhani, there was no occasion earlier when a train may have entered the line other than the one for which signals had been taken off. He stated that the defect of flashing of points had been observed about 30 to 34 time in a month but when asked to confirm this from the Signal Failure Register, he admitted that such occasions were only 4 to 5 in a month. The Signal Failure Register indicated only one such occasion due to a stone obstruction in point No. 29 in April 1981;

5.6.5. To a query as to whether the line No. for receiving 2 DSK was changed from 'ONE' to 'TWO' as appeared from the entry in the T.S.R. compared to other entries in his hand-writing, he stated that the line No. for receiving 2 DSK was recorded as 'TWO' by him in T.S.R.;

5.6.7. The line clearance varification is done by him or by the Pointsman deputed by him. For receiving 2 DSK, since there was a gap opposite his room between the stabled load, he went across personally to verify that line No. 2 was clear before granting line clear;

5.6.8. To a query as to how he noticed the flashing of points while he was busy selling tickets at the booking window, he stated that the signal had come off earlier but the flashing of point Nos. 23 and 29 started after the train entered the line No. 1 and collided with the stabled load (Q. No. 16 and 28). He, however, stated that flashing indication for the points appear on the panel when the points are getting set and locked for the concerned route after the reception signals are taken off. The flashing indication disappears after the points get set and locked (Q. No. 19);

5.6.9. To a query as to why he did not make any mention regarding the flashing of points having been rectified by the signal staff in his original statement given to the railway officials in writing on 24-7-81 soon after the accident, he stated that he was puzzled and in a hurry at that time;

5.6.10. He had given the same private number 21 for two different trains in a hurry;

5.6.11. When asked to re-concile his statement of there being only one lock on the relay room door with the version of some other witnesses who had stated that the practice was to put 2 locks, the witness to his statement. He agreed that there was provision for putting 2 locks since about 1-1/2 months earlier but no lock was being put by him;

5.6.12. The wagons of the stabled load were secured to the rail at both ends by chain and lock, the keys of which were with him. He did not hand over the keys to his relief. The hand brakes of some wagons had also been applied. He however could not satisfactorily explain as to what happened to the chains & locks.

5.7. *Shri Manik Chand, ASM, Pilkhani* (witness No. 13) stated that only one lock was put on the door of the relay room, the key of which remained with the signal staff. He was not aware if provision existed for a second lock to be put on the door. Regarding the procedure for rectifying any defects, he stated that a memo was given to ESM indicating the nature of the defect. He also indicated that no register was maintained by him for recording the entry of signal staff into the relay room.

5.8. *Shri A.N. Singh, ASM, Pilkhani* (witness No. 16) stated that double locks were provided on the relay room (one that of the SM/ASM and the other that of the ESM). When any defect is to be rectified,

a memo is given to the signal staff and a record is maintained by the SM/ASM of their entry into the relay room after which the locks are opened jointly by the SM/ASM and the ESM. The room is again locked up after the work is completed. Answering questions, he stated that :—

5.8.1. Since his posting at Pilkhani in November, 1980, there had been only 4 or 5 occasions during his duty hours when any defect in the panel required attention. The defects generally were flashing of points due to some stone getting stuck at the points. The defects are recorded in the Signal Failure Register and a memo is given to the ESM who after rectifying the defect, records the cause and action taken by him in the register:

5.8.2. When he came to the station soon after the accident, he had observed the relay room locked with two locks on the door.

5.9. *Shri Chander Pal, Pointsman, Pilkhani* (witness No. 14) was on duty when line clear was granted for 2 DSK. After ringing the bell, he was given the Complete Arrival Book by the SM to obtain the signature of the Guard after arrival of the train on the main line (line No. 2). A few minutes later, he was called by the SM to call the signal staff since the points were flashing. He did not find the ESM in his office and called S/Shri Inder Pal and Inam, Signal khalasis. One of them opened the relay room and rectified the flashing defect. Thereafter, as required by the SM, he went to the rear of 2 DSK with the Complete Arrival Book. A few minutes later, 2 SDK collided with the load stabled on line No. 1.

5.9.1. Answering questions, he stated that :—

(i) Since a few months after the panel working was introduced at Pilkhani, the arrangement has been to provide 2 locks on the door of the relay room (one that of the SM/ASM and another of the ESM);

(ii) For any defects to be rectified, a memo is normally given by the Station Master on duty to the ESM. This however was not done on the day of the accident and only a verbal advice was conveyed through him to the Signal khalasis. The locks of the relay room were opened in his presence by the Station Master as also the Signal staff;

(iii) During the previous 8 years since he had been working at Pilkhani, there had been no occasion earlier when a train may have entered a line other than the one for which signals had been taken off;

(iv) For line clearance verification of any line when line No. 1 is occupied, he did so by physical verification if so required by the SM on duty;

(v) When confronted with Shri R.P. Sharma, Station Master, Pilkhani the next day (28-7-81), the witness retracted from his statement and stated that the second lock on the relay room was being put only after the accident. He admitted that he did not tell the truth when he was cross-examined earlier regarding the locking arrangement for the relay room.

5.10. *Shri Kanwarpal Singh, Gateman of Level Crossing No. 90C* (witness No. 15) stated that on the date of the accident, he was asked by the SM to verify if line No. 2 was clear for receiving 2 DSK. He had confirmed this position to him. The witness was confronted with the Station Master but the latter stuck to his statement that the line clearance verification was done by him personally and not through the witness.

5.11. *Shri Inder Pal, Signal Khalasi, Pilkhani*, (witness No. 17) had attended to odd jobs in the battery room and generator room as directed by his ESM on the date of the occurrence. At about 12.15 hrs., he went to check the bonding of the Advanced Starter and the Home signal towards Saharanpur and of the yard along with his colleague, Shri Mohd. Inam, while the ESM went to get some medicine for his eyes. When he was near the down Advanced starter, he heard the loud report of the train collision.

5.11.1. Answering questions, he stated that :—

(i) He was not advised about the flashing of points by Shri Chander Pal, Pointsman;

(ii) The relay room door is provided with 2 locks— (one that of the SM on duty and other of the ESM). To rectify any defects, a memo is given by the SM on duty. The ESM records the time of entry into the relay room in the register maintained by the SM on duty. The locks of the relay room are then opened by the SM on duty and the ESM before the signal staff can enter the relay room;

(iii) He had been working at the station since April, 1978 and the practice of putting 2 locks had been followed since a few months after his posting at the station.

5.12. *Shri Mohd. Inam, Signal Khalasi, Pilkhani* (witness No. 18) generally corroborated what Shri Inder Pal, Signal khalasi had stated.

5.13. *Shri B.K. Kapoor Area Officer, Saharanpur* (witness No. 19), who was travelling by 2 DSK in the fourth coach from the engine, went to the station immediately after the accident, and observed the panel indications. He noted that the reception route, including the over-lap portion, was set and locked for receiving the train on line no. 1. On enquiry, the Station Master told him that when the train was entering the Home Signal, point No. 23 had started flashing on account of which the train came on line No. 1 instead of line No. 2. He seized the records, advised the control and made arrangements for relief and restoration.

5.13.1. Answering questions, he stated that :—

(i) When he reached the station he had observed the ferrule put on the push button 'A' for line No. 1 although this was not recorded in the joint panel observations. Regarding this omission, he clarified that he had discussed this with the officials of other departments and it was felt that the ferrule could also have been fixed on the push button 'A' during the interval of about 7 to 10 minutes which elapsed between the accident and his reaching the station;

(ii) When he reached the station, he found the relay room locked with 2 locks;

(iii) Regarding flashing of points referred to by the SM he did not question any signal staff but he minutely observed the panel indication for point No. 23 which was found lit steadily in the reverse position;

(iv) It appeared to him to be a clear case of reception of the train on occupied line No. 1, since the points at the reception end as well as at the trailing end in the over-lap portion were duly set for the reception of the train on down loop line No. 1.

5.14. *Shri Baldeo Raj, Chief Train Examiner, Saharanpur* (witness No. 10) who reached Pilkhani after the accident, examined the rolling stock jointly with other staff. He did not find any chain or locks by which any wagon of the stabled load may have been secured to the rails.

5.15. *Shri O.N. Vashist, PW1, Saharanpur* (witness No. 11), also confirmed that he did not find any chain or lock by which any wagon of the stabled load of KF special may have been secured to the rails.

## VI. TEST AND OBSERVATION

6.1. Pilkhani is a 'B' class station, interlocked to Standard-III and provided with multiple-aspect colour light signals. The points and signals are worked electrically from a panel located in the Station Master's office. The indications for points in the 'normal' and 'reverse' positions and the signal aspects in ON and OFF position are repeated on the panel.

6.2. The Advanced Starter signals are controlled by SGE type double line lock and block instruments. They are located 670 metres beyond the trailing points. Replacer track circuits have been provided for the Home and the Advanced starter signals.

6.3. On the approach to Pilkhani from Ambala side, the railway alignment is straight. The visibility of signals and points for an approaching Down train is good even from the warning board. During day-time when the weather is clear, it is possible to physically observe the position of point No. 23 leading from the down main line to the down loop from an approaching train even when it is over 100 metres away from the down Home signal. Any load standing on the down loop line can also be sighted in the day time from a distance of over 100 metres from the down Home signal.

6.4. Shelf type relays with anti-tilting arrangement have been provided. The cable testing is being done annually and the insulation of cables was good.

6.5. The points are operated by low-voltage DC electric machines. Point No. 23A taking off from the down main line to the down loop was tested with a 3 mm thick obstruction test piece & found satisfactory.

6.6. As per Signal Failure Register, there were no failures during June, 1981 and the general average of earlier months indicated about 2 failures a month. In July, 1981, there was only one failure due to electric power transferring switch contact. Between April and July, 1981, there was only one occasion when a flashing indication for a point was noted on the panel, which was due to a stone obstructing the movement of point No. 29.

6.7. Tests were conducted to check the working of signals and points from the panel and no malfunctioning was observed.

6.8. A copy of the joint observations of the panel indications recorded soon after the accident is placed at Annexure-I.

## VII. DISCUSSION

### 7.1. Time of accident

According to the control office records, the accident occurred at 12.45 hrs. on 24-7-81. This is also supported by the time of departure of 2 DSK from Sarsawa (12.37 hours) from where the running time to Pilkhani is 8 minutes. The time of accident as 12.45 hours is therefore accepted.

### 7.2. Speed of trains

The KF Special load was stabled on the down loop line of Pilkhani station and was stationary. The speed of 2 DSK when it was near the points has been estimated to be about 18 kmph. by the driver and about 15 to 18 kmph. by the fireman. Considering that the train had taken normal running time between Sarsawa and Pilkhani and it was scheduled to halt at Pilkhani, the speed of 2 DSK being about 18 kmph. as stated by the driver is accepted.

### 7.3. Cause of the accident

The following aspects have been considered :—

- (i) Possibility of 2 DSK entering Pilkhani against reception signals.
- (ii) Locking arrangement and control over entry into the relay room.
- (iii) Defect or manipulation of equipment resulting in change of route from main line to loop line.
- (iv) Possibility of 2 DSK being received on the occupied down loop line by mistake.
- (v) Short comings in station working arrangements.

#### 7.3.1. Possibility of 2 DSK entering Pilkhani against reception signals.

The driver as well as the fireman of 2 DSK have stated that the down Distant signal was green and the Home signal (routing reception signal) was yellow for them indicating reception of the train on the main line No. 2. As stated by them, there was no change in the aspect of any of the reception signals as the train approached Pilkhani. The signal lights were also steady. The Guard of 2 DSK has, however, stated that the driver had told him soon after the accident that the Distant signal was showing double yellow and the Home signal was showing single yellow without the route indicator light, when the train approached Pilkhani. Shri R.P. Sharma, S.M. Pilkhani has also stated that he arranged reception of 2 DSK on the main line and the Distant and Home signals cleared accordingly. Whether the signals were taken OFF for the main line or for the loop line will be discussed later but it has not been denied that reception signals had been taken OFF by the S.M. for receiving 2 DSK at Pilkhani. The possibility of 2 DSK entering Pilkhani against reception signals is, therefore, ruled out.

#### 7.3.2. Locking arrangements and control over entry into the relay room.

7.3.2.1. Shri R.P. Sharma, Station Master, Pilkhani, who was on duty when the accident occurred, has stated that the relay room was locked with one lock only and the key of the same remained with the ESM. Shri Manik Chand, ASM has also corroborated this. On the other hand, Shri A.N. Singh, ASM, Shri Harjit Rai ESM, and both the Signal khalasis have stated that 2 locks were provided on the relay room door (one that of the SM on duty and the other of the ESM). Shri Chander Pal, Pointsman had also initially supported this version, but when he was subsequently confronted with Shri R.P. Sharma, Station Master, he retracted from his statement and stated that only one lock was being provided prior to the accident. The Area Officer, Saharanpur who reached the station within a few minutes after the accident has also confirmed having noticed two locks provided on the relay room.

7.3.2.2. The relay room is attached to the S.M.'s room and the entry to the same is through the S.M.'s room. As per evidence, a record was also maintained by the SM regarding the entry of signal staff in to the relay room and the last recorded entry was on 20-7-1981 as jointly noted after the accident.

7.3.2.3. In the face of the above evidence, I feel that the relay room was being locked with two locks which was also in accordance with the Joint Operating and Signal Circular issued by the Railway *vide* No. 256-Sig/O/SG/Corresp/III dated 8-8-1979 based on instructions issued by the Railway Board *vide* letter No. 75W/3/SG/8/I dated 16-2-1979.

**7.3.3. Defect or Manipulation of equipment resulting in change of route from main line to loop line.**

7.3.3.1. Shri R.P. Sharma, Station Master, who was on duty, has stated that he had arranged reception of 2 DSK on the Down main line and the signals had also cleared accordingly. A little later, when he was selling tickets to passengers, he observed the flashing indication for point No. 23. Accordingly to him, he sent word to the Signal khalasis, who entered the relay room and rectified the defect. The Signal khalasis have denied this and they have stated that they were near the Advanced starter at Saharanpur and when the accident occurred.

7.3.3.2. I am unable to accept the plea of the Station Master regarding any defect in the equipment or its manipulation by the signal staff resulting in a change of route from the down main line to the loop line in view of the following considerations :—

(i) As per panel observations (Annexure I) recorded jointly soon after the accident, the route was clearly set and locked for receiving the train on the down loop line (No. 1) including point No. 29 in the signal over lap portion. This was also noted by Area Officer, Saharanpur who was travelling by 2 DSK and reached the station within a few minutes of the accident. There was also no sign of any damage at point No. 23 to indicate any movement of points under the passage of the train or of its being forced to take any other position. This clearly establishes that the route was set and locked for receiving 2 DSK on the loop line as per panel indications which is also confirmed by the position at site.

(ii) Shri R.P. Sharma, Station Master, in reply to Q. 16 has stated that the flashing of points started after the train entered the loop line No. 1. The train will enter the loop line only if the route was already set for receiving it on the loop line. The plea regarding flashing of points after the train entered the loop line put forward by Shri R.P. Sharma, Station Master is, therefore, a belated attempt to cover up his lapse of receiving the train on the occupied line.

(iii) The tests carried out during the course of my inspection showed that the equipment was functioning normally and the record of failures in the past period did not cast any doubt on the reliability of the equipment.

(iv) Shri R.P. Sharma, Station Master did not give any memo to the signal staff regarding any defect nor was it recorded in the Signal Failure Register. These facts do not, therefore, support the plea put forward by him.

(v) As per joint observations recorded after the accident, the relay room was locked and, according to the records, it was last opened on 20-7-1981. The Area Officer, Saharanpur has also stated that the relay room was locked with 2 locks when he reached the station. This rules out the possibility of any signal staff having entered the relay room shortly before the accident as contended by the Station Master.

(vi) A flashing indication for the point would appear on the panel when the point does not set properly in the correct position either due to some obstruction or due to some alignment defect. The Station Master has stated that the route got set and the signal indications appeared on the panel when he operated the switches/buttons for the reception of 2 DSK. Once the points had set and locked for the route, it is not possible to accept that they would start moving again after the train took the turnout to enter the loop line as contended by the Station Master.

7.3.3.4. The plea of Shri R.P. Sharma, Station Master that the points started flashing after the train entered the loop line implying that there was some defect or manipulation of the equipment by signal staff resulting in a change of route is, therefore, only intended to cover up his lapse and is not acceptable.

**7.3.4. Possibility of 2 DSK being received on the occupied down loop line by mistake.**

7.3.4.1. Having ruled out the possibility of 2 DSK entering the station against signals or of any defect/manipulation of equipment, the only other possibility is of the train being received on the occupied loop line by mistake. This is physically possible in view of the following conditions in the working arrangements at the station :—

(a) The berthing portion of the running lines is not track circuited on account of which no visual indication is available on the panel which may remind the SM on duty and prevent him from receiving a train on an occupied line by mistake, or even to take off signals for the same.

- (b) After stabling the load of KF Special, its engine was detached and moved ahead over the track-circuited point zone and transferred to the up line for despatch to Ambala. This movement over the track-circuit beyond the Starter signal of the down loop line released the locking arrangement on the reception signals which could then be taken OFF again for receiving another train on the same line, although part of the load was still occupying the line.
- (c) Although para 10.2. of the Station Working Rules requires the SM on duty to fix ferrules over the push button for the line on which any vehicle is left standing, there is nothing to physically prevent the SM from receiving another train on the same line in case he forgets to fix the ferrule over the push button.

7.3.4.2. Under the circumstances indicated above, if the SM on duty has inadvertently received 2 DSK on the occupied down loop line, he has no alternative but to cover up his lapse except by the following pleas :—

- (i) Ferrule had been fixed by him over push button 'A' on the panel which would prevent him from receiving the train on the down loop line.
- (ii) Entry in the Train Signal Register to confirm that he arranged reception of the train on the down main line (No. 2).
- (iii) Blaming the equipment for mal-functioning or its manipulation by signal staff resulting in an unintended change of route towards the occupied line.

7.3.4.3. Regarding (i) of para 7.3.4.2. above, Shri R.P. Sharma, Station Master, has stated that he had fixed the ferrule over the push button 'A' on the panel which would not permit him to press the button for setting the route for the loop line. Although this was also noted by the Area Officer, Saharanpur, it is quite possible that the ferrule was fixed over the push button 'A' soon after the accident, since there was a time interval of 7 to 10 minutes between the occurrence of the accident and the arrival of the Area Officer at the station (Q. No. 2 of Area Officer's cross-examination). The joint panel observations recorded soon after the accident as also the position of points including those in the signal over lap portion at site, clearly indicate that the route was set and locked for receiving 2 DSK on the down loop line. Since this fact could not be hidden, Shri R.P. Sharma, SM apparently fixed the ferrule over the push button 'A' as soon as he became aware of the accident and realised his mistake of receiving the train on the occupied line.

7.3.4.4. Regarding (ii) of para 7.3.4.2. above, the line No. recorded by Shri R.P. Sharma, SM in the TSR is 'Two' but a close scrutiny of the hand writing, shows that the original entry in the column for line No. in the TSR could have been 'One' which was subsequently altered to make it appear as if it was written as 'two'. This doubt is further strengthened by comparing the hand writing against other entries made by him. The alteration was apparently made by putting a bar over 'O' to make it look like 'T' soon after the accident by Shri R.P. Sharma, SM to cover in up his lapse.

7.3.4.5. Regarding (iii) of para 7.3.4.2. above, the position has already been discussed in detail under para 7.3.3. I am, therefore, unable to accept this plea put forward by Shri R.P. Sharma, SM who was on duty when the accident occurred.

7.3.4.6. Apart from the above, the following contradictions in his evidence raise further doubts in respect of the credibility of Shri R.P. Sharma, SM :—

- (i) He has stated that the stabled load of KF Special was secured by chains and locks to the rails as required under the rules but there was no evidence to support this.
- (ii) He had given the same private No. 21 for two trains (2 DSK as also K/ASR) on the same day which shows his carelessness in working.
- (iii) According to him, the Distant and Home signals cleared for the main line initially and the flashing indication for points was noticed by him when he was selling tickets to the passengers. It is not practically possible for a person busy with the sale of tickets to see such a flashing indication on the panel from his position near the booking window. On this being pointed out to him, he stated that the flashing started after the train had entered the loop line No. 1 (Q. No. 15 and 16).
- (iv) In his statement to the Area Officer as also the Guard of 2 DSK soon after the accident, Shri R.P. Sharma, S.M. did not say anything regarding the flashing defect having been rectified by the Signal Khalasis. This plea, therefore, appears to be only an after thought to cover up his lapse.

- (v) He stated that the flashing of points occurred about 30-34 times in a month and that the same was recorded in the Signal Failure Register. When asked to prove this from records, he admitted that such defects were only 4 to 5 times in a month. As actually observed from the records such instances were much less, there being only one such occasion between April and July, 1981 (Q. No. 10 and 11).

7.3.4.7. While considering the possibility of 2 DSK having been received on the occupied loop line by mistake, we have to consider the statement of the Driver of 2 DSK who has stated that the reception signals for his train had been taken OFF for the down main line. The Driver as also the Fireman of 2 DSK have stated that the Distant signal was 'green' and the routing reception signal (Home) was 'yellow' indicating that the train was being received on the down main line. On the other hand, the Guard of 2 DSK has stated that the Driver had told him soon after the accident that the Distant Signal was showing 'double yellow' and the Home signal was displaying 'single yellow' without the route indication. The Distant signal would show double yellow only when the route is set for receiving the train on the loop line. Between these contradictory versions, I am inclined to place greater reliance on the Guard's statement which is in conformity with the setting of route for the loop line. The Driver and the Fireman have apparently not stated the true facts to save themselves from any blame for not exercising due care and vigilance in observing the load standing on the loop line and stopping their train in time to avert the accident. During the day time in clear weather the load stabled on the loop line as also the actual position of points can be made out from a distance of over 100 m from the Home signal. Had the Driver been adequately vigilant, the collision may possibly have been averted or its consequences very much minimised considering the slow speed of the train. To save themselves from this blame, they have apparently not spoken the truth and chosen to state that the reception signals had been taken off for the down main line.

#### 7.3.5. Short comings in the working arrangements at Pilkhani station.

7.3.5.1. With centralised operation of points and signals (Panel interlocking), only the point zones at the station have been track-circuited. The berthing portion of the running lines continues to be non-track circuited. The Railway Board *vide* their letter No. 76/Safety-I/3/23 dated 16-4-1979, issued instructions that stations provided with centralised operation of points and signals (Panel interlocking) should have complete track-circuiting of the station section upto the block clearance limit. In respect of stations already commissioned without this facility, the Railway were required to provide this facility *on top priority on out of turn basis*. The Railway Board further desired that till such time the aids indicated in their letter were provided, adequate transportation staff should be provided/retained temporarily so that the requirements for train reception/despatch could be complied with.

7.3.5.2. The existing working arrangements at Pilkhani station have the following short comings :—

- (i) Since track-circuiting is confined only to the point zones, no visual indication is available on the panel to the SM on duty if any running line is occupied.
- (ii) As per station working rules, the line clearance verification is required to be carried out personally by the SM on duty. This is not practically possible in actual practice when the view of the SM on duty is restricted by a train standing on any intervening line, or at night-time, or under adverse weather conditions, when the visibility is poor.
- (iii) Prior to introduction of panel interlocking, with cabins at weather end, the responsibility for line clearance verification devolved on the SM on duty as also on the staff in the cabins at both ends. This ensured the safety of trains unless all the three individuals failed to perform their duty simultaneously. In the present arrangement, this is the responsibility of only one individual (SM on duty) but without adequate aids to assist him.
- (iv) After receiving a train on a particular line, if part of the load is moved forward to occupy and clear the track-circuit of the point zone ahead (as in this case), it is possible to take OFF the reception signals for receiving another train on the same line, even though part of the load is still occupying the line. This would not be possible if the berthing portion is also track-circuited.
- (v) Under the circumstances in which this accident occurred, the main action to guard against a momentary lapse which could have prevented setting of the route over the occupied loop line was the fixing of a ferrule over push button 'A' on the panel. In actual working it is quite possible for the SM on duty to forget fixing the ferrule leading to his inadvertently



pressing the push button through over-sight. The arrangement does not, therefore, provide adequate built-in safety to guard against such a slip.

- (vi) Although it is nearly three years since the issue of orders by the Railway Board as referred to in para 7.3.5.1. above, no tangible progress appears to have been made to implement the same. Without complete track-circuiting of the station section, the train working staff at the station is seriously handicapped in complying with vital safety requirements.
- (vii) Although the Railway Board permitted adequate transportation staff to be provided/retained to comply with the requirements for train reception/despatch until complete track-circuiting was carried out, the existing complement of staff at the station does not adequately take care of this. Thus an undue burden is imposed on the train passing staff.
- (viii) Although track-circuiting of only the point zones permits quicker operation of points and signals for reception of despatch of trains, the element of safety has been reduced as referred to against items (i), (iii), (iv) and (v) above.

## VIII. CONCLUSIONS

### 8.1. Cause of the accident

On careful consideration of the factual, material and circumstantial evidence, I have come to the conclusion that the collision of 2 DSK Passenger with the load of empty KF Special stabled on the down loop line at Pilkhani station on 24-7-1981 was caused by 2 DSK having been received on the occupied loop line. This occurred partly due to failure of some of the railway staff and partly due to short comings in the aids provided for station working.

### 8.2. Responsibility

8.2.1. *Shri R.P. Sharma, Station Master, Pilkhani* is responsible for receiving 2 DSK on the occupied loop line. He apparently failed to fix the ferrule as required by the working rules over push button-A on the panel which would have prevented him from setting the routes for receiving any train on the occupied loop line. In considering his lapse, due allowance has to be given to the inadequacies in the safety aids available at the station as detailed in para 7.3.5.2. above.

8.2.2. *Inadequacy of the safety aids at the station.* These have been detailed in para 7.3.5.2. which handicapped the station staff and contributed to the occurrence of the accident. As indicated earlier, in the ultimate analysis, the main safety feature to guard against receiving another train on the occupied line under similar circumstances is the fixing of a ferrule over the push button on the panel for the occupied line. This does not provide adequate safety even against a momentary lapse on the part of staff.

8.2.3. *Shri Ilam Chand, Driver of 2 DSK* has to share some blame for not exercising due caution and vigilance while entering the station which would have enabled him to spot the load stabled on the loop line and possibly averting the accident or minimising its consequences. While considering his lapse, it has to be borne in mind that his view when approaching the station from Ambala side is somewhat obstructed due to the presence of trees, and it is only from about 100 metres before the Home signal that a clearer view is available.

8.2.4. *Shri Om parkash, Fireman of 2 DSK* has also to share the blame for not assisting his Driver by exercising due caution and vigilance while entering the station which would have enabled him to spot the load stabled on the loop line and possibly helped in averting the accident or minimising its consequences. While considering his lapse also, it has to be borne in mind that his view when approaching the station is somewhat obstructed due to the presence of trees and it is only from about 100 metres before the Home signal that the view improves.

8.2.5. *Shri R.P. Sharma, Station Master (D.O.B. 12-2-1927)* was appointed as a Signaller on 9-7-1947. He was promoted as A.S.M. on 8-12-1950 and as Station Master on 9-7-1973. He has been punished twice in his service career and his accident index (as in July, 1981) was 47.

8.2.6. *Shri Ilam Chand, Driver (D.O.B. 14-6-1926)* was appointed as Cleaner on 11-5-1945. He was promoted as Fireman on 9-2-1948, as Shunter on 11-10-1951 and as Driver on 1-1-1963. In his present

grade, he has been working since 1-6-1981. After promotion as Fireman, he has been punished 15 times and his accident index (as in July, 1981) was 672.

8.2.7. Shri Om Parkash, Fireman (D.O.B. 16-4-1951) was appointed as Cleaner on 5-10-1969 and he was promoted as Fireman from 9-12-1976. He has not received any punishment during his service career and his accident index is 'nil'.

8.3. *Relief Arrangements*—I am satisfied that the relief arrangements and medical attention given to the injured were satisfactory.

## IX. REMARKS AND RECOMMENDATIONS

9.1. As per Railway Board's letter No. 76/Safety-I/3/23 dated 16-4-1979, stations provided with centralised operation of points and signals (Panel Interlocking), are required to be provided with complete track circuiting of the station section upto the block clearance limit. At stations already commissioned earlier without this facility, the Railways were instructed to provide the same on *top priority on out of turn* basis. Requisite action to comply with these orders does not appear to have been taken. Immediate action should be taken to comply with the aforesaid orders of the Railway Boards. No new works of panel interlocking should be programmed until complete track circuiting of the station section upto the block clearance limit at stations already commissioned earlier without this facility is completed.

9.2. Since and cabins have been given up with panel interlocking, the line clearance verification has been made the personal responsibility of the SM on duty. Such a stipulation will remain only on paper as this is not practically possible to be complied with when the view is obstructed due to train standing on any intervening line, or at night time or in bad weather, when the visibility is restricted. The Railway Board in their letter referred to in para 9.1. above had desired that, till such time the aids specified in the letter were provided at stations already commissioned, adequate transportation staff was to be provided/retained for verifying the clearance of lines and complying with the other duties required under the working rules. Immediate action is called for to review the working arrangement at all panel interlocked stations where complete tracking is yet to be done to ensure that additional staff as warranted is posted so that the working rules can be complied with in a practical manner without under mining safety.

9.3. After stabling the load on the down loop line, gaps were left between different parts of the stabled load to enable passengers entraining/detraining from trains received on other lines to cross over from/to the rail level platform adjacent to the down loop line on which the station building/booking office is located. The casualties were amongst passengers who got trapped in these gaps when the collision occurred. As per para 10.2. of the station working rules no vehicles should be stabled on running lines unless they are properly secured. As a safeguard, it is further recommended that when a load is stabled on a running line, the points leading to the occupied line should be cotter-bolted and the feed to the motor operated point should be disconnected by operating the disconnecting link, to guard against inadvertant reception on a blocked line.

9.4. The Advanced Starter signals at Pilkhani are located about 670 m beyond the trailing points. It is recommended that the Advanced Starter signals should be shifted and located at about 120 m. beyond the trailing points.

9.5. As per Railway Board's letter No. 75-W/3/SG/8/1 dated 16-2-1979, at stations where the relay room is not manned by signal maintenance staff round the clock, double locks are required to be provided (one that of the S.M. and the other of the ESM). The Northern Railway has accordingly issued a joint Operating and Signal Circular bearing No. 256-Signal/O/SG/Corresp. III dated 8-8-1979. To avoid disputes arising after an accident, it is suggested that the Station Master should be made personally responsible to ensure compliance with these instructions as also for the maintenance of records regarding the entry of signal maintenance staff into the relay room.

9.6. Level crossing No. 90 (C-class) located within Pilkhani station yard has the position of its gates normally 'Open' to road traffic. As per Railway Board's letter No. 77/W-3/SG/LX/2 dated 16-3-1979, the position of gates at all 'B' and 'C' class level crossings should normally be 'Closed' to road traffic. If it is considered necessary to keep the position of the gates normally 'Open' to road traffic on consideration of

traffic density, it should be up-graded to 'A' class or Special class failing which the normal position of gates should be made 'Closed' to road traffic as required *vide* para 4.2. of the aforesaid letter of the Railway Board. This action needs to be taken for all such level crossings on the Railways.

Yours faithfully,

(Suresh Chandra)  
Commissioner of Railway Safety,  
*Northern Circle, Lucknow.*

Dated : 16-2-1982.

JOINT NOTE OF READING OF PANEL OF PILKHANI AFTER  
ACCIDENT OF 2 DSK ON 24-7-1981.

Counter Reading—00132

Route was correctly set and locked for Dn. Loop line.

29 showing Reverse Light.  
30 -do- Normal light.  
28 -do- Normal light.  
22 -do- Normal light.  
23 -do- Reverse light.

Seal of 9 EUYNR found broken. All indication of Route setting is correct. It shows that it is a clear case of train received on blocked line Dn. loop No. 1.

2T White  
2AT Red showing  
23AT Red showing  
23BT Red showing.

Sd/-  
(S.N. Sharma)  
24/7  
S.I./D—I/SRE  
Sd/- SLI/SRE

Sd/- AO/SRE  
Sd/- CTXR/SRE

Sd/-  
(PWI/JUD)  
24/7

Sd/- AEN/SRE

Time 15.30 hrs.

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

### Findings :

This Ministry, *Prima facie* agrees with the Commissioner of Railway Safety that the accident was caused by 2 DSK Passenger train having been received on the occupied line. The responsibility of the Station Master on duty at Pilkhani, the Driver and Fireman of 2 DSK is also, *prima facie*, acceptable. This Ministry, however, do not agree with the observations of CRS that the accident was partly due to inadequacies in the aids provided for station working and that due allowance on this account may be given while determining the lapse of the S.M. In this connection, this Ministry wish to observe that at stations, where running lines are not track circuited, it is an obligation on the part of the S.M. on duty to verify the clearance of the line by personal observation before arranging the reception of a train. This has been clearly spelt out in the Station Working Rules. In the subject accident, the passenger train was received on the down loop line which was occupied by a goods load. It was a broad-day light with clear visibility, and the view of the line was also not obstructed. There was no extenuating factors which could have prevented the S.M. to ensure reception of the passenger train on a clear line after personal observation. The Station Master thus clearly failed to discharge his duties as per Station Working Rules. In view of this, there is no reason to make any allowance by which responsibility of the Station Master can be diluted. It is significant to note that Chief Commissioner of Railway Safety also holds similar views on this issue.

### Remarks and Recommendations

*Para 9.1.* —Board have decided that the all new stations programmed for Panel Interlocking, shall be provided with complete track circuiting of the station sections upto the block clearance limit. The stations already commissioned without this facility are being provided with the same, but due to shortage of funds, it was not possible to complete the work. However, the action is being taken on a programmed basis to complete this work on different Railways.

To stop all new works of panel interlocking at the stations till the work of complete track circuiting of all lines is completed shall not be practical as the provision of panels at various stations are programmed either on account of the renewals or as a part of line capacity works.

*Para 9.2.*—A review has been made by the Railway Administration as to the working arrangements at all panel-interlocked stations, where complete track-circuiting is yet to be done, to assess the requirements of additional transportation staff. Further action, as necessary, would be taken by the Railway.

*Para 9.3.*—Instructions regarding setting of points against blocked line already exist on the Railways, *vide* Board's letter No. 80/Safety (A & R)/29/3 dated 4-2-80.

Disconnection of the feed to the motor-operated point, is not a feasible proposition. This has been also noted by CCRS.

*Para 9.4.*—It is not obligatory to shift advanced starter to 120 metres from the fouling mark. However, in this case the railway administration has planned to shift the advanced starter close to starter along with the work of track circuiting and CCRS has noted this point.

*Para 9.5.*—Instructions are being reiterated in this regard to the Railways.

*Para 9.6.*—The matter has been examined by this ministry in the light of references received from some of the Railways. Further instructions have been issued *vide* Board's letter No. 77/W-3/SG/LX/2 dated 8-10-82.

PRI-263

500-1988 (DŞK-IV)