

SOUTH CENTRAL RAILWAY

VIGIL

QUARTERLY SAFETY BULLETIN NO.4

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My dear Railwaymen

The safety performance for the year 2014-15 when compared to 2013-14 reveal some positive points such as no collision and manned LC accident against one each in the previous year. Similarly, there was no averted collision and breach of block rules against one during the last financial year. UMLC accidents declined from 4 to 3, derailments remained 4 against 4.

However, considerable increase was found in SPAD cases, i.e., 8 against the 5 upto December 2014. Another area where there is significant increase is yard derailments which increased to 19 against 10 of the previous year.

Number of preventable accidents have taken place, hence there is every need to rededicate ourselves and ensure that there will not be accidents / unusual incidents. This bulletin will give benefit to update your knowledge with latest Railway Board letters, some important rules, amendment slips to G&SR and IRPWM, test your knowledge with key, details of accident cases that took place, safety drives launched and statistical performance.

With best wishes.

**(S. P. SAHU)
CHIEF SAFETY OFFICER**

Section “A” KNOWLEDGE
Extracts of Railway Board letters

No.2012/Safety (DM)/7/25. New Delhi, Dt 28.10.2014.

Sub: Accidents due to signal Passing at Danger.

In the current financial year till date three consequential accidents and 28 indicative accidents have occurred over IR due to Loco Pilots Passing Signal at Danger. In one of the recent consequential accident 12 passengers were killed and 45 passengers injured.

Safety Directorate has analysed 239 SPAD cases from 01.04.2011 till 31.08.2014 and analysis indicates:-

1. Number of SPAD cases in Passenger and Freight trains is almost same.
2. Number of SPAD cases in Diesel and Electrical traction trains is almost same.
3. 65% of the SPAD cases have occurred after availing complete head quarters rest.
4. Maximum numbers of SPAD cases have occurred in the time period 10-12 hours.
5. In 70% of the cases the overall duty hours was less than six hours. Only in six percent of the cases the crew has worked beyond the prescribed duty hours.
6. In maximum SPAD cases LP is in the age group of 40-45 years.
7. Only 16% of the SPAD cases were caused by “C” grade Loco Pilots.

The above analysis indicates no specific reason could be attributed for the lack of alertness of the crew resulting in SPAD. Hence, it is imperative that overall working/living conditions needs to be improved with stress on proper health management by the loco

running staff. In this the role of the loco inspectors and the loco supervisors becomes paramount and their performance needs to be monitored closely & effectively.

Safety Directorate has compiled various instructions issued from the RB with regard to monitoring, counselling and other technical instructions reflected to running staff, the same is attached as Annexure.

It has also come to notice the Board that on some Zonal Railways the prescribed punishment norms for SPAD are not being properly implemented. It is reiterated that Zonal Railways must adhere to the prescribed punishment norms in SPADF cases too, as is being done in other accident cases. Failure to do so must be commented upon adversely while reporting upon the performance of the disciplinary authority in the APAR by the Reporting Authority.

Officers and Supervisors may please be advised strictly follow instructions issued from RB with an emphasis on proper counselling/monitoring of running staff. Action taken by the Railway to reduce SPAD cases and follow-up action of this letter may be advised to the Board at the earliest.

(Sanjiv Garg)

Advisor Safety

No.2014/Safety (A&R)/3/78. New Delhi, Dt 29.10.2014.

Sub: UMLC Accidents on Zonal Railways.

In the past few months, board have been extremely concerned about the increasing trend of accidents on UMLCs on various Zonal Railways. Vide Board's Letter No.2014/Safety (A&R) LC Boards dated 22.02.2014 & 04.08.2014, zonal railways were advised to install a Repeater Whistle Board for level crossings at a distance of 250 meters in advance of the level crossings for the Loco Pilots to whistle while approaching UMLC/MLC to warn the road users. Further, vide Board's letter No. 2014(A&R)/Level Crossings(Pt) dated 22.05.2014, zonal railways were advised to deploy Gate Mitra/Gate

Counsellors' to counsel the road vehicle users for observance of safe practices while negotiating UMLCs. It seems that due to non-implementation of these instructions, UMLC accidents have continued to occur.

In a separate communication, Board (MT) has advised NWR to deploy Gate Counselors as far as possible on UMLCs and also install the Repeating Whistle Board vide Board's D.O. letter of even number dated 27.10.2014.

In view of the above, all Zonal Railways, are again advised to deploy Gate Counselors on UMLCs as far as possible and also to install the Repeater Whistle Board to curb that spate of accidents at UMLCs. Action taken in this regard may please be communicated to Board at the earliest.

(Sanjiv Garg)
Advisor Safety

No.2012/Safety(A&R)/18/1/Pt.I. Dated 10.11.2014.

Sub: Inspection of Railways by the Commissioner of Railway Safety.

Ref: RB's Letter No. 52-W/80/35 dated 16.07.1953.

The issue of inspection of open lines on Zonal Railways by the Commissioners of Railway Safety has been under consideration with the Ministry of Railways.

It has now been decided by Board (MT, ME & CRB) to withdraw the above mentioned Railway's letter No.52-W/80/35 dated 16.07.1953 with immediate effect. Further, the inspections by CRS/CCRS will be done in terms of provisions of Para 6(b) of the Railways Act 1969; which inter-alia says:

“The Commissioner shall make such periodical or other inspections of any Railway or of any rolling stock used thereon as the Central Government may direct”.

(Vijaylaxmi Kaushik)

Executive Director/Safety-I

No.2006/Safety (A&R)/3/12. New Delhi, Dt 14.11.2014.

Sub: ALERT Advise No.01/2014.

Based on the prima-facie cause of train accidents which occurred recently, the following "ALERTS" are advised for taking necessary precautions to prevent similar occurrences:-

1. Fire Accident in BTPN Wagons:-

In Danapur Division of East Central Railway on 27.10.2014(SIMS ID-7801), fire on goods train with BTPN wagons was reported due to metallic ceiling wire coming in contact with the OHE wire. RDSO has issued instructions for switching over to non-metallic sealing wire vide letter No. MW/BTPN DATED 22.06.2012 which was circulated by Railway Board vide CRB's D.O. Letter 2005/MW/951/41 dated 11.07.2012. However, it is noticed that in the field, metallic sealing wires are still in use.

2. Derailment due to Signal Passing At Danger:-

In Izzatnager Division of North Eastern Railway a goods train over-shot starter signal on 16.10.2014(SIMS ID-7777) and subsequently, train engine plus 13 wagons derailed. Prima-facie it is observed that Loco Pilot of the train had replaced hose pipe of the locomotive subsequent to a cattle run over but failed to remove the plastic cap on the palm end of the hose pipe. Loco Pilot and guard failed to conduct continuity test as per prescribed norms, resulting in zero brake power on the train.

(Sanjiv Garg)
Advisor Safety

No.2014/PL/40/21 New Delhi, date: 23.09.2014

Sub: Location of trap points to isolate station room siding.

On 15.06.2010 the instance of rolling down of 11 wagons from a Private siding with loaded BOX N rake at Paras station, inflicts that

the shunting movement within the station had violated the isolation and the siding.

CCRS, Lucknow in his report had recommended:

“Railways should ensure at all stations that points isolating the station from a siding are not closed until and unless status of siding line(s) is ascertained and it is established that isolations in rear have been made effective and remain so up till the time, isolating points are in closed position”

The incident happened due to improper location of the trap point isolating the station from the siding. **The trap should have been placed ahead of the outer most trailing point of the station towards the siding.**

It is requested to please ensure to sensitise all concerned and immediately get identified all such faulty locations of the trap points and take up necessary actions to ensure that the isolation of a siding with the station is maintained for every movement(other than that from the siding to the station and vice-versa) within the station.

The same may also be kept in mind while planning for future yard modifications.

**ED(Planning)
Railway Board.**

No.2014Sig / M / 83rd SSC item No. (1166) 24.11.2014.

General Managers

ER & SCR.

Sub: Trials for new resetting procedure of BPAC.

Ref: 83rd Signal Sighting Committee's recommendations.

There is no standard procedure being adopted for resetting of BPAC on account of cable cut/damage/equipment burn out/stolen etc, lead to heave detention of trains especially in high density net work areas, which may lead to the staff resorting to short cuts and unsafe

practices. To overcome this problem, following course of action should be followed on trial basis on ER and SCR.

Specially for Block Proving Axle Counters, after any failure, preparatory resetting should be mandated for the first time to follow. In case, the BPAC does not restore to normal after the passing of the first train, the Axle Counters may be bypassed after permitting adequate safeguards as under:-

- a. Serving of Memo by the SSE/JE to the Station Master/Dy.SS about the failure of BPAC with exchange of private number.
- b. Block Section to be normalised with exchange of Private numbers between Station Masters of both the stations controlling the block section.
- c. Entry in the Tran Signal Register including recording of the reset counter reading.
- d. Monitoring of Data Logger records by SSE/JE.

Suitable procedure order to be issued by COM & CSTE incorporating the above and any other activity considered for safe operation.

Trials may be conducted for six months. At the end of the trial, a joint report from COM and CSTE be submitted to the Board.

This has the approval of Board (MT)

(Harish Deep Srivastava)

Director/Signal

No.2005/Safety(A&R)/6/4 New Delhi, Dated 11.12.2014

**Sub: Nomination of Safety Officers in Departmental
Accident Inquiry Committee for investigating
accident case.**

It has been observed that in some of the Zonal railways, Safety Officers are not being nominated as a part of the Departmental inquiry Committee even in cases of consequential accidents.

It has therefore, been decided that the Railways should ensure that while constituting Departmental inquiry Committees to investigate Consequential Accidents that are not being investigated by

CRS, Safety Officer should invariably be nominated as a member of the inquiry committee. In case Safety Officer in same grade as of the inquiry Committee is not available in the division, safety Officer of one grade below may be nominated for the inquiry Committee.

(Sanjiv Garg)

Advisor Safety

No.2005/Safety(A&R)/19/24 Dated 28.11. 2014

Chief Operations Manager

South Central Railway

Sub: Change in respect control circuits of Distant Signals SCR

**Ref: Your Office Letter No.T./G&SR/AM/Vol.X date
24.10.2014.**

The issue relating to instructions laid down in G&SR 3.07(4) and CRS/South Central Circle's views thereon as brought out vide letter referred to above have been examined. In this connection attention is invited to Para(vi) of Board's letter of even dated 27.07.2011(copy enclosed) which provides that since the amendment to GR 3.07(4) notified under the Gazette of India does not prescribe requirement of approved special instructions, the changes in aspects and indications of distant signal do not require approval of CRS. Immediately after Para(vi) of Board's letter even dated 27.07.2011 in respect of the speed restrictions to be prescribed under special instructions as mentioned in amended 'Attention' aspect of Distant Signal, the following approval of Board has also been conveyed:-

'Speed Restriction to be prescribed under special instructions under the heading "Attention" is required only when the train is being received on the loop line. No specific speed limits need be laid down when the train is received on the Main line'.

The above decision of Board a conveyed vide Board's letter of even dated 27.07.2011 is reiterated and action to be taken accordingly.

(Sanjiv Garg)

Advisor Safety

Section “B”

**Some important rules – Working of trains
through PLCT (T/C.1425-UP PLCT &
T/D.1425-DN PLCT)**

ANNEXURE

1.1 Use of Line Clear Enquiry Message-(T/A 1425-Outward& T/B inward):

- a. The Train Signal Register shall be referred to before any entries are made in Line Clear Inquiry Message (outward) to ensure that the entries in Train Signal Register are complete and the block section is clear.
- b. The Line Clear Enquiry Message for despatch (T/A 1425-Outward) and the Line Clear Enquiry Message received (T/B 1425-Inward) shall be written personally by the SMs ‘X’ and ‘Y’. Care shall be taken to ensure that the messages are complete and correct in all respects. If a mistake is made while writing message, the wrong entry shall be cancelled drawing a line lightly through it, so that it can be read at any time and not by ensure and the correction initialled by the SM.
- c. Immediately after despatch or receiving each message, the SMs at either end shall exchange their initials and enter the initials in the columns ‘received from’ and ‘received by’ – (T/A 1425-Outward and T/B 1425-Inward).
- d. After recording a message in the Line Clear Enquiry Message (Outward/Inward), if interruption occurs, this fact shall be recorded against the last entry in the message.

- e. No abbreviation or curtailment of words or train description shall be used in the body of any message-(T/A 1425-Out ward and T/B 1425-Inward) or PLCT (T/C.1425 or T/D.1425).
 - f. The direction of the train i.e., UP or DOWN shall also be recorded. The numerical number of the train in Two/Three/Four/Five digits shall be spelt out fully (Ex.FL.10/170/2718/12728 etc., instead of last digits 18). Similarly the timings 'Out report' and 'In report' shall also be spelt out in four digits (Ex. 21.34hrs and 21.55hrs etc., instead of last digits 34 and 55).
 - g. The 'Station Master Stamp' should be affixed on the PLCT. The name of the station to which the Loco Pilot is authorised to proceed shall be written in full, confirming to the official spelling of the station's name as given in the Working Time Table.
 - h. The Loco Pilot shall check the PLCT is correctly and completely filled without any alterations and that the train number and description, date, direction and the name of the 'station to' are correct.
 - i. When 'Line Clear' is obtained through Block Phone or Control Phone or VHF set, the Station Master shall write 'by means of' in the 'A' portion of outward message-T/A.1425.
- 1.2 **Daily serial numbers and Private Numbers:**
- a. Each 'Line Clear Enquiry Message (Outward)' shall be numbered consecutively from one, connecting from Zero hour of each day.
 - b. In 'Reply despatched to Line Clear Enquiry received to station,', reference to message number shall be quoted.
 - c. Every 'Line Clear' sent shall be allotted a Private Number. The Private Number shall be recorded both in figures words in 'reply

despatched’ and ‘ reply received’ portion of T/A 1425and T/B 1425 respectively.

1.3 Preservation of T/A 1425,T/B 1425,T/C 1425 and T/D 1425 :

The T/A 1425,T/B 1425,T/C 1425 and T/D 1425 shall be preserved at stations for one year the half year in which they are completed and after that they shall be treated as old records and disposed off as such. T/A 1425,T/B 1425,T/C 1425 and T/D 1425 required to be retained pending enquiries or cases etc., shall on no account be treated as old without obtaining specific orders from the officials who had issued the original orders for retention.

1.4 Method of sending a train from 'X' and 'Y' using T/A 1425,T/B 1425,T/C 1425 and T/D 1425 :

If 'X' and 'Y' are two consecutive block stations, the method of sending a train from station 'X' to station 'Y' using 1425,T/C 1425 and T/D 1425 is as follows:

Sending Station 'X'		Receiving Station 'Y'	
1.	Fill up column A of Outward portion of T/A 1425 and inform the particulars on phone (Line Clear Enquiry).		
		2.	Fill up column A of inward portion of T/B 1425 as per the information received on phone
		3.	If 'Line is Clear' , fill up column B of inward

			portion of T/B 1425 and inform on phone.
4	Fill up column A of onward portion of T/A 1425 and prepare T/C 1425(UP PLCT) or T/D 1425(Down PLCT) as the case may be and arrange to hand over to the LP.		
5	Fill up column B(Out report) of outward portion T/A 1425 and inform on phone.		
		6	Fill up column B (out report) of inward portion of T/A 1425 as per the information received on phone.
		7	On arrival of the train, fill up column C (in report) of inward portion of T/B 1425 and inform on phone.
8	Fill up column(in report) of outward portion of T/A 1425.		

1.5 Delivery of Paper Line Clear Ticket to the Loco Pilot:

- a. The Station Master shall deliver the Paper Line Clear Ticket to the Loco Pilot personally or through a competent railway servant. The Loco Pilot shall acknowledge in column A of T/A 1425.
- b. The PLCT shall not be handed over to the Loco Pilot of a train which has to perform shunting at the station until the shunting is completed and the train is ready to start.
- c. Two engines on one train – If there are two engines on one train, PLCT shall be delivered to the Loco Pilot of the leading engine.
- d. In case of any delay in the receipt of the ‘in-report’ for a train the Station Master, who despatched the train shall enquire the reasons for the delay.

1.6 Counter ‘Line Clear’ enquiry during interruption of control phone:

- a. When ‘Y’ receives ‘Line Clear Enquiry’ form ‘X’, if ‘Line Clear’ is required for more important train waiting at ‘Y’ station, ‘Y’ should send a counter ‘Line Clear Enquiry’.
- b. ‘Y’ should write Red Ink in column A of the inward portion of T/B 1425 the words ‘Cancelled’. He shall then record the ‘Counter Line Clear Enquiry’ in column A of outward portion of T/A 1425(fresh form) and inform ‘X’. Station Master at ‘X’ shall write the words ‘Cancelled’ in Red Ink in the column A of outward portion of T/A 1425. ‘X’ shall then record in column A of inward portion of T/A 1425 (fresh form) and inform ‘Y’ station.

Note: Refer Chapter-II for precedence of Trains.

1.7 Refusal of Line Clear:

If, owing to obstruction, shunting or any other reason, the Station Master at ‘Y’ station is unable to give the Station Master at ‘X’ station ‘line Clear’ for a train, he shall refuse ‘Line Clear’ stating reasons for doing so. The refusal of ‘Line Clear’ shall be

entered in the outward message-T/A 1425 and inward message T/B 1425 at both the stations and fresh form of T/A 1425 shall be used when the Station Master at 'X' asks the Station Master at 'Y' 'Is Line Clear' again when conditions for 'Line Clear' are favourable.

1.8 Withdrawal of 'Line Clear' in case of emergency:

- a. If the Station Master 'X', after obtaining 'Line Clear' from 'Y' desires to withdraw 'Line Clear' in case of any emergency, he shall withhold PLCT from sending to the Loco Pilot. If the PLCT already handed over to the Loco Pilot, it shall be collected back, if possible. If the train has already left the station 'X' to 'Y' before the withdrawal of PLCT, the Station Master at 'X' shall immediately warn the Station Master at 'Y' about the train's position.
- b. If the Station Master 'Y', after granting 'Line Clear' to 'X', desire to withdraw 'Line Clear' in case of any emergency, he shall make all possible efforts to inform station 'X' through any means of communication.
- c. If 'X' or 'Y' succeeds in withdrawing 'Line Clear' in an emergency the PLCT shall be cancelled following prescribed procedure.

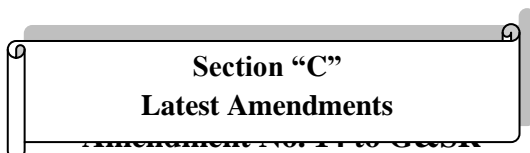
1.9 Applying for 'Line Clear' for shunting outside the First Stop signal on Single Line Token less Territory:

- a. When the Station Master at 'X' requires to shunt a train partly or fully outside the First Stop Signal in the direction of the station 'Y' as per the procedure laid down in 1.4 above.
- b. The Station Master shall then issue to the Loco Pilot, along with the PLCT, a memo authorising him to pass shunt outside the First Stop Signal and return to the station and obtain his acknowledgement. The shunting shall not be commenced until this is done. When the shunting is completed abs the 'X'-'Y'

block section is clear, 'X' shall cancel the 'Line Clear' and inform 'Y'.

1.10 Cancelling 'Line Clear':

- a. When, after 'X' has obtained 'Line Clear' from 'Y' he finds it necessary, for any cause to cancel 'Line Clear', he shall recover the PLCT from the LP and call 'Y's attention.
- b. If 'Line Clear' is cancelled due to the train having been detained, the PLCT shall be cancelled and the Loco Pilot's copy of T/C 1425 or T/d 1425 attached to record copy.
- c. The Station Masters at 'X' and 'Y' shall then make entries in the D column of T/A 1425 or T/A 1425.



Item No-1 GR1.01 (1) GR1.01 (2) are modified as follows-
Short title and commencement:-

- i) These rules may be called the Indian Railways (open Lines) General (Amendment) Rules, 2014.
- ii) They shall come into force on the date of their publication in the official gazette.

Item No-2: Amendment given to General Rule 4.35 for sub-rule (3) is modified as follows:

‘(3) the Guard shall not give the signal for starting unless he has satisfied himself that, except in accordance with special instructions, no person in any compartment or vehicle or roof of the vehicle not intended for the use of passengers. Guard, Loco Pilot or Assistant shall take help, if necessary from Government Railway Police, Railway Protection Force and Station Staff to remove the unauthorised persons from the compartment or vehicle or roof of the vehicle.’

INDIAN RAIWAYS PERMANENT WAY MANUAL

Advance Correction Slip No.135 dated 05/2014

1. The existing Para 151(1)(a) shall be replaced with the following:-
Para 151(1)(a) – Level-cum-gauge, square, hemp cord, metre stick, keying and /or spiking hammer, fish bolt spanner, 2 sets of H.S. flags, 2 H.S. lamps/ Tri-color torches in the night, 2 nos. of whistle thunders, 10 detonators, marking chalk and Rail Thermometer.
2. The existing Para 910(1) (g) and (i) and note to Para shall be replaced with the following:-
 - (i) Para 910 (1) (g): 10 No. Detonators in Tin Case.
 - (ii) Para 910 (1) (i): 2No Banner Flag.
- “**Note:** In case of level crossings in the multiple lines the hand signal flags/lamps, detonators and Banner flags shall be increased suitably.”
3. The existing Para 1007(c) shall be replaced with the following:-
Para 1007(c): 10 detonators in a tin case.
4. The existing Para 1116(c) shall be replaced with the following:-
Para 1007(c): Detonators 10 Nos.
5. The existing Annexure-9/7 of Para 918(2) shall be replaced by the new annexure-9/7 Para 918(2) as attached.
(Colour of speed breaker sign has been changed from yellow to black)
6. The existing Annexure-2/11(sketch and table) and Annexure-2/13(Sketch) of Para 263 of IRPWM shall be replaced by the new Annexure-2/11(Sketch and Table) and Annexure-2/13(Sketch) of Para 263 as attached.
7. The existing Annexure-2/16 Para 237(5) Pro-forma for inspection of points and crossings given shall be replaced by the new Annexure-2/6 Para 237/(5)pro-forma for inspections of points and crossings.
8. The existing Para 1014(1) (d) of Indian Railway Permanent Way Manual replaced by the following:-
Para 1014 (1)(d)- Cutting and Hills designated as vulnerable by Den/Sr.DEN.

A new note may be added in the last of Para 107 to IRPWM as under:

Note – The AEN shall inspect the cuttings in his jurisdiction as per applicable provisions of Bridge Manual.

A new note may be added to the last of Para124 to IRPWM as under:

Note–The Senior Section Engineer/ P.Way (SSE/P/Way) shall inspect the cuttings in his jurisdiction as per applicable of Bridge Manual.

A new note may be added to the last of Para139 to IRPWM as under:

Note–The Junior Engineer/ P.Way shall inspect the cuttings in his jurisdiction as per applicable of Bridge Manual.

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INDIAN RAILWAYS PERMANENT WAY MANUAL
ADVANCE CORRECTION SLIP No. 136 dated 14.11.2014

1. The existing Para 237(8) (b) of Indian Railways Permanent Way Manual shall be replaced with the following:

Para 237(8)(b) - If gauge of track adjoining the points and crossings is maintained wider/ tighter than the gauge on the points and crossings, the gauge on the adjoining track should be brought gradually to same gauge as in the points and crossings as a good maintenance practice.

2. The existing Para 279 of Indian Railways Permanent Way Manual shall be replaced as under:

Para 279. Provision and maintenance of signalling fixtures in track:

- (1) **Provision of signalling fixtures in track:**

- (a) No signal fixtures / installation which interfere with maintenance of track should be provided on track unless the approval for same is available from Track Directorate of RDSO or Railway Board.
- (b) S&T Department shall provide adequate number of personnel for opening of signal rod, gears etc. to facilitate mechanized track maintenance.

(2) Precautions to be taken while working in Track Circuited Area:

- (a) The Permanent Way Inspector should instruct the staff not to place across or touching two rails in the track, any tool or metal object which may cause short circuiting.
- (b) All gauges, levels, trolleys and Lorries used in the track circuited length should be insulated.
- (c) Steel or C.I. pipes used for carrying water /gas under the track should be run sufficiently below the rails to prevent any short circuiting.
- (d) While carrying out the track maintenance, care should be taken to see that no damage of track circuit fittings like rail bonding wires, lead wires to rails, boot leg, jumper wires etc., takes place.
- (e) Use of steel tapes should be avoided in track circuited section.
- (f) Pulling back of rails should be done in track circuited areas in the presence of S&T staff, where signalling connections are involved.
- (g) Proper drainage should be ensured so as to avoid flooding of track, during rains, particularly in yards, where watering of coaches is done and in water columns and ashpits. It would be desirable to provide washable concrete aprons on platform lines at originating stations, in track circuited areas.
- (h) Ballast must be kept clean throughout the track circuited section and care should be taken to see that minimum ballast resistance per kilometer of track should not be less than 2 ohms per km in station yard and 4 ohms per KM in the block section as per Signal Engineering Manual Para 17.28. Wherever, PSC sleepers are used, availability of insulated liners upto a minimum level of 97% shall be ensured.

3. The existing Para 406(2) (a) of Indian Railways Permanent Way Manual shall be replaced with the following :

- (2) Cant Deficiency- Maximum value of cant deficiency-

(a) On routes with track maintained 100 mm. to C&M-I, Vol-I standard for nominated rolling stock with permission of Principal Chief Engineer.

4. The existing para 421 of Indian Railways Permanent Way Manual shall be replaced by the following:-

Para 421. Criteria for realignment of a curve -

- (1) When as a result, of inspection by trolley or locomotive or by carriage or as a result of Track Recording carried out, the running on a curve is found to be unsatisfactory the curve should be realigned.
- (2) The running over a curve depends not only on the difference between the actual versine and the designed versine but also on the station to station variation of the actual versine values. This is because, it is the station to station variation of versine which determines the rate of change of lateral acceleration, on which depends the riding comfort.

Service limit for station to station versine variation for 3 speed group viz, Below 140 kmph and upto 110 kmph, Below 110 kmph and upto 50 kmph and below 50 kmph, should be considered as tabulated below:

S. No.	Speed on curve	Limits of station to station variation of versine (mm).
1	Below 140 kmph and upto 110 kmph	10 mm (15 mm for speed of 110 kmph) or 20% of average versine on circular portion, whichever is more.
2	Below 110 kmph and upto 50 kmph	20 mm or 20% of average versine on circular portion, whichever is more.
3	Below 50 kmph	40 mm or 20% of average versine on circular portion, whichever is more.

In case exceedence of the above limit is observed during inspection, local adjustment may be resorted to in cases where the variation of versine between adjacent stations is only at few locations, at the earliest possible. If more than 20%

stations are having versine variations above the limits prescribed, complete realignment of curve should be planned within a month.

5. The existing Para 427(2) of Indian Railways Permanent Way Manual shall be replaced with the following:

Para 427(2): Track mounted automatic Gauge Face Lubricators should be provided on curves of radius 875m (2°) and sharper on broad gauge and of radius 300 m and less on meter gauge to reduce rail gauge face wear.

On routes where rail grinding is in practice, Track mounted automatic Gauge Face Lubricators should be provided on curves of radius 1400m (1.25°) and sharper on Broad Gauge. While deciding the location of lubricators, following should be considered: -

- (a) It is located on tangent track at the beginning of transition curve where wheel flanging is just beginning to occur. On single lines, the lubricator shall be located in the direction of heaviest traffic.
- (b) Lubricators should be located away from switches, crossings and other areas where discontinuity in LWR track may exist.

6. The existing Para 502(1) of Indian Railways Permanent Way Manual shall be replaced with the following:

Para 502(1)- Alumino Thermic Welding of rails may be carried out in accordance with the detailed procedure laid down in the 'Manual for Fusion Welding of Rails by Alumino Thermit Process'. A thermit weld done in-situ shall be joggled fish-plated with two clamps and supported on wooden blocks till tested as good by USFD.

7. The existing Para 708(1) of Indian Railways Permanent Way Manual shall be modified by incorporating a note below para as under:

Note: - *The maintenance tolerances given in different Para of IRPWM are for mainline track only on consideration of comfort and not for yard lines and other lines having low speed potentials.*

8. The Annexure-7/2 Part-B of Para 708 (1) of Indian Railways Permanent Way Manual shall be replaced by following:

ANNEXURE-7/2 Contd... PARA 708 (1) PART-B Track Measurements

Station No.	Distance apart in metres	Gauge slack or tight from the exact (mm.)	Cross Level (mm.) Under no load condition	Marks on sleepers or rail top	Grinding or rubbing marks on rails
1	2	3	4	5	6

Examination of alignment for perceptible kinds of track distortion in the vicinity of the point of derailment	Subsidence of track	Versine in mm.		Remarks regarding length of transition, degree of curve and specified super elevation general alignment etc.	Longitudinal level to be recorded in the case of M. G. and N. G. in case of sags and curves
		On 20 M. or 10 M. chord depending on practice prevalent on the Railway for flat curves more than 600 M. radius	On 10 M. or such shorter Chords as considered necessary for sharp curves (less than 600 M. radius on B. G. and M. G.)		
7	8	9	10		

9. Existing Para 804 of Indian Railways Permanent Way Manual shall be replaced with the following:

Para 804. Works which obstruct the line:

(1) Precautions before commencing operations which would obstruct the line - No

person employed on the way, works or bridges shall change or turn a rail, disconnect points or signals or commence any other operation which would obstruct the line without obtaining the written permission of the Station Master who shall ensure that all necessary signals have been placed at 'ON'. In addition, the employee mentioned above shall also ensure that the necessary stop signals like banner flags and detonators and hand signal flags have also been placed/exhibited at the prescribed locations as per **Para 806**.

Provided further that in emergent cases the persons undertaking such operations shall first bring the train to stop as stipulated in Para 812 and advise the driver of the train about the need to stop the train through a written memo. The railway servant shall simultaneously arrange to send a message to the Station Master for the need to block the track as per para 810 and obtain written confirmation of the same. The work which may lead to obstruction to the track shall however be done only during the traffic block, the written confirmation for which shall be obtained from the concerned Station Master. On completion of the work again the authorized railway servant shall advise the driver through a written memo to proceed at the prescribed speed.

(2) Works requiring complete block protection - The following category of works will necessarily require completed block protection:

(i) Category of works where track is required to be occupied:

- (a) Working of on-track machines
- (b) Working of material trains or girder specials
- (c) Working of dip-lorries
- (d) Working of motor trollies
- (e) Working of push trolley in heavily graded sections.
- (f) Working of push trolley in sections where visibility is obstructed
- (g) Push trolley in long tunnels.

(ii) Works where discontinuity in track is created or such conditions are created which may result in discontinuity or obstruction to running track:

- (a) Through rail renewal
- (b) Casual replacement of rail
- (c) Replacement of SEJs or replacement of buffer rails with SEJs
- (d) Insertion or replacement of glued joints
- (e) Temporary/Permanent repairs of rail fractures
- (f) Temporary/Permanent repairs of rail to buckling
- (g) Replacement of switch/crossing or any part of turnouts
- (h) De-stressing of LWRs
- (i) in- situ welding of rails
- (j) End cropping and welding
- (k) Through renewal of bridge sleeper
- (l) Replacement of girders with slabs
- (m) Removal of rail from track for any purpose
- (n) Renewal of sleeper on important and major bridges.
- (o) Changing of guard rails on important and major bridges.

Note: (1) Some of the works listed above may also necessitate mandatory imposition of speed restrictions.

(2) The list of works indicated above is indicative only and other works may also be required to be done under block protection based on site specific conditions as decided by P. Way officials.

10. The existing Para 824 of Indian Railways Permanent Way Manual-2004 shall be replaced with the following:

Para 824. Warning signal- Descriptions - The signals to be used to warn the incoming train of an obstruction shall be a red flashing hand signal lamp at night or red flag during day as per Para 3.65 of General Rules.

11. The existing Para 825 of Indian Railways Permanent Way Manual shall be replaced with the following:

Para 825. Use of warning signals - When it becomes necessary to protect an obstruction in ► a Block section, a warning signal may be used, as prescribed under Para 3.66 of GR, while the railway servant proceeds to place detonators. A warning signal is to be shown to give timely warning to a driver of approaching train of any

obstruction such as derailed train obstructing adjacent lines, breaches, wash away, floods, landslides etc., when the railway servant does not have adequate time to do the protection in the normal manner with the detonators as envisaged under rules. The knowledge and possession of warning signals shall be ensured by every railway servant concerned with the use of warning signals as stipulated in Para 3.67 of GR.

12. The existing Para 910(y) of Indian Railways Permanent Way Manual shall be replaced with the following:

Para 910(y) - Gatemen working on double line/ multiple lines, ghats, suburban and automatic block territories shall be provided with three warning signals as prescribed in Para 824. Gatemen working on single line sections shall be supplied with one warning signal.

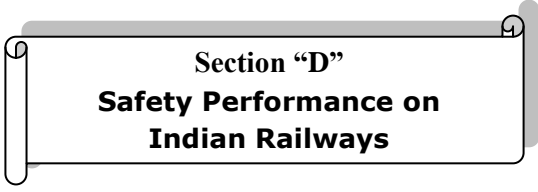
13. The existing Para 1007(1) (1) of Indian Railways Permanent Way Manual shall be replaced with the following:

Para 1007(1)(1) - Three warning signals as prescribed in para 824 on double/ multiple lines, ghats, suburban and automatic block territories and one warning signal on single line sections.

Addendum and Corrigendum Slip No.9 to IRSEM, Part II

Chapter XIV, Item No. 5 of Annexure 10 of Para 14.1.7

	Special class	“A” class	“B1” Class	“B2” Class	“C” Class
	>50,000	>30,000 and <50,000	>25,000 and <30,000	>20,000 and <25,000	
5. Approach locking					
Existing	<ul style="list-style-type: none"> i. To be provided in sub-urban section ii. Dead approach locking with timing of 30 seconds in other sections. 				<ul style="list-style-type: none"> i. To be provided in suburban section. ii. Dead approach locking with timing of 30 seconds in other sections where EOLBs are provided
Amended	<ul style="list-style-type: none"> i. To be provided in suburban section. ii. Dead approach locking with timing of 60 seconds in other sections. 				<ul style="list-style-type: none"> i. To be provided in suburban section. ii. Dead approach locking with timing of 60 seconds where both EOLBs / MOLBs are provided



Section “D”
Safety Performance on
Indian Railways

No.2014/Safety (A&R)/15/10 Date:16.06.2014.

Sub: Information Bulletin on Railway safety.

The under signed is directed to refer Lok Sabha Secretariat (Research Information Division) U.O. Note No.10-PRIS/E&S/2014 dated 10 June 2014 on the above subject and to state that the requisite material prepared by the Ministry of Railways on the subject. Railway Safety is enclosed for necessary action.

This issues with the approval of Advisor/Safety Railway Board.

(Ashish Kumar)
Director Safety

Safety Performance on Indian Railways

Railways accord highest priority to safety in train operations. Consequential train accidents, excluding Unmanned Level Crossing Incidents on Indian Railways have declined from 239 in 2003-04 to 71 in 2013-14. This is the lowest ever figure in a year. In the current year during 1st April to 10th June,2014, the number of consequential train accidents excluding Unmanned Level Crossing Incidents increased from 11 to 16 in comparison to the corresponding period of the previous year.

A statement showing type-wise number of consequential train accidents during 2003-04 to 2013-14 and the current year is given below:-

Type of Accident	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15 (Upto 10 th June, 2014)
Collision	9	13	9	8	8	13	9	5	9	6	4	1
Derailments	202	138	131	96	100	85	80	80	55	49	53	16
Manned Level Crossing Accidents	9	5	10	7	12	7	5	5	7	5	4	2
Fire in Train	14	10	15	4	5	3	2	2	4	8	7	3
Miscellaneous	5	3	4	8	4	7	4	1	2	-	3	1
Total	239	169	169	123	129	115	100	93	77	68	71	23

The above figures do not include incidents of trespassing at unmanned level crossings (UMLCs) caused due to negligence of road vehicle users. The number of such incidents of trespassing at unmanned level crossings during the year 2003-04 to 2013-14 and the current year is as under:-

Type of Incident	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15 (upto 10 th June)
Unmanned Level Crossing Incidents	86	65	65	72	65	62	65	48	54	53	46	17

Accidents per Million Train Kilometres, an important index of safety has come down from 0.41 in 2003-04 despite quantum increase in the volume of traffic carried by IR over the years.

Cause of Consequential Train Accidents

Human failure constitutes the largest single factor for accidents on Indian Railways. Failure of other than railway staff mainly road vehicle user is responsible for the incidents at unmanned level crossings

A statement showing broad cause-wise break up of consequential train accidents excluding incidents of trespassing at UMLCs during 2003-04 to 2013-14 and the current is given below:-

Causes of Accident	2003 - 2004	2004 - 2005	2005 - 2006	2006 - 2007	2007 - 2008	2008 - 2009	2009 - 2010	2010 - 2011	2011 - 2012	2012 - 2013	2013 - 2014	2014-15 (upto 10 th June)
Failure of Railway staff	161	119	120	85	88	75	63	56	52	45	52	17
Failure of other than Railway staff	21	13	21	12	16	14	10	9	9	6	7	1
Failure of equipment	18	14	8	9	9	0	6	5	5	6	1	
Sabotage	18	4	6	8	7	13	14	16	6	3	4	2
Combination of factors	2	1	0	1	0	4	1	3	1	0	0	
Incidental	17	16	11	7	8	5	4	4	3	7	4	2
Could not be established conclusively	2	2	3	1	1	4	2	0	1	1	0	
Under Investigation										0	3	1
Grand Total	239	169	169	123	129	115	100	93	77	68	71	23

Note: Incidental cases include acts of nature like falling of boulders, sinking of track due to heavy rain, cattle over etc.,

Causalities:

The number of causalities in train accidents fortuous and not strictly susceptible to comparison. Number of persons who lost their lives in consequential train accidents(2003-04 to 2013-14) and the current year is as under:

Type of Accidents	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15 (upto 10 th June)
Collisions	8	39	25	2	1	8	44	240*	22	27**	1	1
Derailments	90	15	148	8	13	10	14	4	73#	5	6	5
Manned LC Accidents	12	9	6	11	27	18	7	7	6	18	6	2
Fire in Train	41	0	15	0	0	31	0	0	9	30 [§]	35***	0
Miscellaneous	5	0	1	41	2	13	3	0	5	0	6	4
Total	156	63	195	62	43	80	68	251	115	80	54	12

UMLC Incidents	138	173	120	146	148	129	170	130	204	124	95	52
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*Including 150 dead in the derailment and collision of Jnaneswari Express on 28.05.2010 caused due to Sabotage, 66 in collision of Uttarbanga Express at Sainthia, 23 in Collision of intercity Express at Bharadwas.

including 71 persons died in the derailment of 12311 Kalka Mail near Malwan (UP) on 10.07.2011.

** 25 in Collision of Hampi Express with goods train at Penukonda on 22.05.2012.

§ 30 in Fire incident in Tamilnadu Express on 30.07.2012.

*** 26 killed in fire in Nanded Express on 28.12.2013 and 09 killed in Fire incident in Dehrdun Express on 08.01.2014.

Safety Measures on Indian Railways:

Safety measures on IR envisage Accident prevention and Mitigation directed towards Continuous reduction in Risk Level to its Customers. This is being done by adopting new technologies and improvement in asset reliability to reduce human dependence. Efforts in this direction are multi-pronged. One major effort is directed towards progressively achieving reduction in accidents attributable to human failure which involves the following measures:

❖ To Avoid Collisions

➤ Anti Collision Device:

- Anti Collision Device is a Global Positioning System (GPS) based device provided in the locomotive which continuously transmits position of loco to other locomotives in the vicinity and applies brakes in a collision like situation.
 - The deployment of Anti- Collision Device(ACD) after initial trials, was done on North Frontier Railway(NFR) covering 1736 Route KMs. This was a Single/Double line Non-Electrified Broad Gauge section. Anti Collision Device provided by Konkan Railway Corporation Limited (KRCL) and on trials on North Frontier Railway had operational problems and technical issues. To overcome these problems, KRCL has deployed on Tinsukia Division of North Frontier Railway and the joint trials by RDSO, NFR and KRCL have since been completed.
 - On the basis of evaluation of performance of the above joint trials, further loading of this improved software 1.1.2m of ACD has been completed on the remaining 4 divisions of NFR i.e. Katihar, Alipur Duar, Rangia and Lumding and the performance of the complete system is under evaluation by RDSO and KRCL.
 - ACD version 2.0 for electrified multiple lines; Automatic signalling section was put on trial on Southern Railway in 2010-11.
 - Operational & Technical problems were experienced during the trials on Southern Railway which could not be fully resolved by KRCL due to design limitation of ACD.
 - Works for deployment of ACD have been sanctioned on 6800 RKMs over Eastern, East Coast, Southern, South Central, South Western and South Eastern Railways at a cost of 442 Crores.
- **Train Protection Warning System:**
- TPWS is a safety system based on the International Safety Standards. It eliminates accidents caused due to human error like Signal Passing Danger and over speeding.
 - Two pilot projects of Train Protection Warning system (TPWS) have been implemented (i) between Chennai Central and Gummidi Pundi (50 RKMs) on suburban sections of Southern

Railway and (ii) Non-suburban Delhi-Agra section(200 route KMs)of Northern/North Central Railway where service trials are in progress.

- TPWS is also under commissioning on Kolkata Metro between Dumdum and Kavi Subhash Marg stations (25 Route KMs).
- Further works have been approved for provision of TPWS (ETCS level 1) on 3330 RKM at a cost of 1740Crores on IR covering Automatic Signalling Sections/High Density Net work (HDN) of eight Zonal Railways.
- In the first phase, process to acquire TPWS (ETCS level 1) equipment on Automatic signalling Suburban sections where Electrical Multiple Units (EMUs), Main line Electrical Multiple units (MEMUs), Diesel Multiple Units(DEMUs) and Main line Locomotive ply has been initiated for Eastern, South Eastern and North Central Railways.

➤ **Train Collision Avoidance System(TCAS)**

- Based upon the experienced gained from ACD and TPWS systems, IR has now taken up development of TCAS which is being done indigenously by RDSO. TCAS shall be a fusion of functionalities of TPWS and ACD and shall prevent Signal Passing At Danger (SPAD) and Collisions.
- RDSO has finalised the specification of TCAS and proof of trials were successfully were carried out during October/November 2012 on SCR.
- Extended field trials are being conducted by RDSO on 250 KM section Lingampalli -Vikarabad-Wadi-Bidar sections of South Central Railway have been planned by RDSO and wok was allocated after finalising the tenders.
- Full Prototype of the system shall be ready for field trials and functional trials with 40 locomotives and 250 Route KMs section shall start shortly.
- Operational deployment of TCAS on Railways will be considered after successful extended field trials expected to be completed by September 2014.

➤ **Auxiliary Warning System(AWS)**

- AWS is a Track magnet based system working in Mumbai suburban area of Western and Central Railways since 1987 (320 RKMs) where trains run a Headway of about 4 minutes.
- This system applies brakes automatically in case Loco Pilot disregards a RED Signal.

➤ **Vigilance Control Device (VCD)**

- Vigilance Control Device is a system where if the Loco Pilot does not perform a certain set of actions over a period of 20 seconds, it gives audio visual alarms and then applies brakes automatically.
- Provision of VCD has been completed in almost all diesel and electric locomotives.
- Provision of isolation of running lines to prevent cases like Badarvas Accident.
- Complete Track Circuiting of the station to enhance safety by verification of track occupancy has been completed at 99.83% of total A,B and C Routes.
- Fouling Mark to Fouling Mark Track Circuiting on entire 'A', 'B', 'C', 'D' and 'D' Special Routes where permissible speed is more than 75 KMPH, has been completed.
- Electrical/ Electronic Inter locking System to eliminate human failure is being progressively provided at stations.
- Block Proven Axle Counters (BPAC) for 'Last Vehicle Check' has been for about 4000(approx.) Block Sections.

❖ **To Reduce Derailments:**

- Up gradation of Track Structure considering of Pre Stressed Concrete (PSC) sleepers, 52 kg/60 kg, high strength (90 kg /mm² ultimate tensile strength) rails on concrete sleepers, fan shaped layout on PSC sleepers, Steel Channels Sleepers on girder bridges adopted on most of the routes.
- Track structure is being standardised with 60 kg rails and PSC sleepers on all the BG routes, especially on high density routes to reduce fatigue of rails under higher axle-load traffic.

- New construction and replacement is done with PSC sleepers only.
- Long rail panels of 260 meters/130 meters length are being manufactured at the steel plants to minimise number of weld joints.
- Reduction in Thermit Weld joints on rails, use of SPURT cars for Rail flaw detection.
- All rails and welds are ultrasonically tested as per laid down periodicity.
- Progressively shifting to flash butt welding which is superior in quality compared to Alumina Thermit (AT) welding.
- Progressive use of modern track maintenance machines viz., Tie-Tamping, Ballast Cleaning Machines, Track Recording Cars, digital Ultrasonic Flaw Detectors, Self Propelled Ultrasonic Rail Testing Cars, etc.
- Two Rail Grinding Machines are being procured. Rail Grinding and rail lubrication for enhanced rail life and reliability has been recently introduced.
- Electronic monitoring of track geometry is carried out to detect defects and plan maintenance.
- Modern Bridge inspection techniques for determining health of the bridges.
- Introduction of Wheel Impact Load Detector (WILD).
- Regular patrolling of railway Tracks at vulnerable locations including night patrolling and intensifying patrolling during foggy weather.
- To minimise effects of accidents, Coaches with Central Buffer Couplers are being manufactured with anti-climbing features.

❖ **To Curb Accidents at UMLCs**

➤ **Elimination of UMLCs through various means**

- It has been decided to progressively eliminate all unmanned level crossings by (i) closing unmanned level crossings having NIL/ negligible TVUs, (ii) merger of UMLC with nearly unmanned/manned level crossing gates or Road Under Bridge or

Road Over Bridge or Subway by construction of diversion road, (iii) provision of Subways/RUBs. The UMLCs which cannot be eliminated by the above means, will be progressively manned based on the volume of rail road traffic (TVUs) and visibility condition.

- Construction of ROBs/RUBs at manned Level Crossing Gates with TVUs > lakh and Limited Height Subways to replace Manned Level Crossings shall reduce accidents at MLCs. Interlocking and provision of phones at Manned Level Crossing Gates is also being done.
- All UMLCs shall be progressively manned or eliminated.

➤ **Ensuring Basic Infrastructure**

- Provision of basic infra structure on all UMLCs which includes provision of appropriate visibility, width, gradient, level surface on either side from centre of the nearest track, whistle boards Road warning boards, surface of the approach road and speed breakers/rumble strips as per laid down instructions.
- Periodic inspection of such crossings to ensure the above and for taking corrective action, If any.

➤ **Education of Road Users**

- Social Awareness campaigns to educate road users with the use of various print and electronic media for observance of safe practices prescribed in MV Act and IR Act and joint Ambush Checks along with civil police to counter misadventure in front of approaching trains.
- SMS Campaigns to create awareness amongst road users.
- Periodic census of level crossings by multi disciplinary teams to recommend their manning if the traffic density has exceeded the threshold levels.
- Trial of Train Actuated Warning Device (TAWD) to warn road users.

❖ **Measures Taken to Prevent Fire in Trains**

- Indian Railways have always endeavoured to enhance fire worthiness of coaches by using fire retardant furnishing materials to mitigate the effect of fire such as Compreg Board/PVC for coach flooring, laminated sheets for roof, ceiling wall and partition and panelling, Rexene and cushioning material for seats and berths, FRP windows and UIC Vestibule etc. Specifications for such furnishing materials have been periodically reviewed to incorporate fire retardant parameters in line with UIC and other international norms. All new manufacture of coaches/periodical overhauling of existing coaches is being carried out with fire retardant specifications of the furnishing materials wherever condition based replacements are warranted.
 - With a view to improve fire safety in running trains, a pilot project for provision of Comprehensive Fire and Smoke Detection System has been taken up in one rake of Rajadhani Express on East Coast Railway. Similar automatic fire alarm system in 20 more rakes for extended field trials has also been decided.
 - Guard-cum-Brake Van, AC Coaches and Pantry Cars in all trains are provided with portable fire extinguishers to cater for emergencies due to fire accidents.
 - Improved materials for electrical fittings to such as MCB, light fittings, Terminal Boards, Connectors etc are being used progressively.
 - Detailed instructions have been issued to Zonal Railways for observance of safe practices in handling of pantry cars and for ensuring periodical inspection of electrical and LPG fittings in the Pantry Cars.
 - Intensive publicity campaigns to prevent the travelling public from carrying inflammable goods are regularly under taken.
 - Two Separate Fire Safety Audit Teams have been constituted recently to plan fire safety audits.
- ❖ **Administrative and other Measures Taken in Recent Past to Enhance Safety**

- Safety Performance is invariably reviewed as a first item on Agenda of every Board Meeting. All accidents are analysed in detail so that remedial measures can be initiated.
- Chairman and Board Members have conducted Safety Review Meetings with General Managers and PHODs of many Zonal Railways during their visits.
- Officers of Safety Directorate have gone to various Zonal Railways on field inspections, specially focussing on safety related aspects.
- DRMs have been directed to conduct intensive window trailing inspection of each section of their division and submit an analytical review regarding safety preparedness in their jurisdictions.
- Intensive foot plate inspections including night inspections have been conducted in the level of Senior Administrative Grade (SAG) and Branch Officers and Supervisors in the field.
- Safety drives on various safety related issues have been launched from time to time covering the lessons learnt from recent train accidents so as to prevent similar accidents in future.
- Emphasis has been given on prevention of accidents at UMLCs through launch of publicity drives, ambush checks and SMS campaigns.
- Renewed efforts are being made to eliminate UMLCs by way of construction of grade separators (RUBs/ROBs), manning, diversion etc.,
- A drive has been launched to fill up all safety category vacancies in a time bound manner.
- Thrust is given to imparting paper and adequate training to all safety category staff including on simulators.

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**Section “E”
Accident cases**

1. **Brief of the accident:** On 03.11.2014 electrical multi loco Nos. 31427 (live) + 31238 (dead) was further coupled with another live electric loco No. 31345 on Road No. L-1 of SNF station of SC Division and planned to move all the three locos towards HYB station. Multi loco was manned by one Shunter and another loco which was attached to the multi was manned by another Shunter. Even before the departure signals are taken ‘off’, locos were moved which passed Starter Signal at ‘on’ and derailed in the trap point.

Cause: Disregard of the signals by the Shunter/s. Secondly, leading loco was unmanned whereas 2nd & 3rd locos are manned, i.e., loco changing was not done by the Shunter.

Staff held responsible: Both the Shunters.

Matters brought to light:

- First Shunter thought that the powering is given by the second Shunter and the second Shunter thought that first Shunter is driving.
- Subsequent to the derailment, both the Shunters tried to pull back the derailed locos and dragged it approximately for 15 – 20 m causing track damages.
- First Shunter failed to be alert having known that BP hose pipe between rearmost loco and middle loco is not coupled.
- Second Shunter resorted to unsafe short-cut practice of not allowing coupling of BP hose pipes by Pointsman. He also resorted to unsafe practice of unmanning the live loco leaving the energised loco duly releasing SA-9.

2. **Brief of the accident:** On 06.11.2014, at about 17.26 hours, LP of 57561 (SC – RAL) Passenger while entering onto mainline

of BDPL station of GNT Division, passed Mainline Starter at 'on' and stopped after passing 45m.

Cause: Late reaction by the LP & ALP in application of brakes leading to SPAD.

Staff held responsible: LP, ALP & nominated LI of SC Division who were working the train are held under 'primary'. Guard of the train and CCC under 'blameworthy'.

Matters brought to light:

- LP & ALP are not aware of the location of the mainline Starter Signal which was on right hand side.
- LP & ALP have not undergone LR during night.
- CCC/SC failed to ensure that the crew shall do sign 'on' / 'off' in CMS.
- It is the first independent trip of the LP and the nominated LI failed to monitor the LP upto the destination; instead he got down at Thipparthi station ahead of the destination.

3. Brief of the accident: On 09.11.2014 at about 05.22 hours, rear collision of Goods train took place at COA Siding of BZA Division resulting in the derailment of BV of first Goods train. SM/COA Goods Terminal started one Goods train on multiple pilot method as per SWR of COA into the CFL/NFCL/KSPL Siding. When the first train was waiting at the first diverging Point No. 120 for setting and locking of the same by the Pointsman, SM/COA of Goods Terminal without ensuring clearance of the first train beyond the Point No.120 started another Goods train on 'pilot out' memo. LP of second Goods train entered into the section and collided in rear of the BV of first Goods train which was on a curve.

Cause: Violation of SWR provisions by SM/COA Goods Terminal.

Staff held responsible: SM/COA Goods Terminal.

4. Brief of the accident: On 17.11.2014, there was a case of 'averted collision' between light engine and Goods train at COA station of BZA Division. Details of the incident are, Dy.SS/Goods Terminal received a loaded Goods train from Siding and the formation was backed onto Road No.1 which is a dead end towards siding direction. While backing the rake, the loco was stopped beyond the Starter Signal so that the rear end of the formation will not be infringing the road path. Subsequently, Dy.SS/Goods Terminal obtained permission from Dy.SS/Coaching Terminal to dispatch light engine and prepared paper authority T.369 (3b) to pass Starter Signal at 'on'. At the same time, Dy.SS/Goods Terminal granted permission to Dy.SS/Coaching Terminal to start one Goods train. Accordingly, common slot was released by Dy.SS/Goods Terminal to Dy.SS/Coaching Terminal to start the Goods train by taking 'off' Starter Signal. There are two alternate lines to deal traffic between these two terminals which can be used as twin single line. But, accidentally, both Dy. SMs despatched the trains on the same line. LP of light engine trailed through Point No. 26 (cross over connecting these two lines) and entered onto the same line on which Goods train from opposite direction was signalled for departure from Coaching Terminal. However, the Starter Signal flown back since the light engine entered from the opposite direction. LP of Goods train noticed the head light of the light engine and shouted on walkie-talkie set and as a result of that the light engine LP stopped which finally resulted in Averted Collision. Staff held responsible: Dy.SS/Goods Terminal.

Matters brought to light:

- Station records were checked and found that the station authorities have tarnished the records such as T.369 (3b) book not available, trailed through point was attended by S&T and Engineering without issuing S&T Disconnection Notice (T.351).

- No entry was made in the Accident Register, Signal Failure Register.
- Failure memo was not issued.
- However, datalogger evidence could not be manipulated.

5. Brief of the accident: On 19.11.2014, at 20.48 hours, when BOXN Empty Goods was passing AKP station of BZA Division, opposite to station building before Starter Signal on DN Mainline, BVZC (BV) of the Goods derailed.

Cause: An old crack on the right hinge of the flap door of a wagon (5th before BV) caused hanging door which came in contact with platform coping and came below the wheels of BV resulting in derailment of the BV.

Staff held responsible: JE/C&W/BZA who was in-charge at the time of rake examination (CC rake) on 30.10.2014 as ‘primary’ and LP, ALP & Guard of UBL Division under SW Railway under ‘blameworthy’.

Matters brought to light:

- Practice of tightening with GI wires while closing of doors of BOXN wagons is continuing at large.
- While exchanging ‘all-right’ signals by the station staff at some stations, sufficient lighting is not available to examine for unusual on the formation during night.

Suggestions & Recommendations:

- TXR assistance if required to be sought for repairing the closure of the doors rather than simply tying them with GI wire.
- Proper focussing lights to be provided to the station staff for use while exchanging ‘all-right’ signals.
- 8 LC Gates that are located between YLM – AKP stations were situated on left hand side. It is suggested that one gate lodge should be on left hand side and another on right hand side so that there is every possibility of identifying hanging parts in the

formation, in other words gate lodges should be constructed in zigzag manner.

- 6. Brief of the accident: On 19.11.2014, light engine was signalled for reception onto UP loop (Common loop) at SKZR station of SC Division since the light engine is planned for giving precedence to coaching trains. LP of the light engine was supposed to stop at the Starter Signal at 'on', instead he passed it at 'on' and entered into sand hump. Subsequently, the loco was pulled using diesel loco.
Cause: LP failed to act in time to stop the train before the Starter Signal which was at 'on'.
Staff held responsible: LP & ALP of light engine.**
- 7. Brief of the accident: On 10.12.2014, BCN empty Goods arrived onto 2nd loop of JCL station of HYB Division at 23.50 hours. While reversing the BV onto 1st loop, BV derailed.
Cause: Without ensuring proper uncoupling of CBC, forward movement to engine was given resulting in derailment of BV which climbed over the iron skid.
Staff held responsible: Guard of the train who was supervising the shunt movements along with Pointsman was made as 'primary'. LP under the 'secondary' and TI of the section + nominated LI under 'blameworthy'.**
- 8. Brief of the accident: On 10th December 2014 at about 08.49 hours, AC coupled light engines were signalled for reception onto UP loop line of UPD station of BZA Division. LP of the light engine passed Starter Signal No. S-27 at 'on' and entered into sand hump resulting in SPAD.
Cause: Late application of brakes by the crew of light engine.
Staff held responsible: LP & ALP of light engine as 'primary'.**

9. **Brief of the accident:** On 22nd December 2014 while performing shunting of empty rake, loco derailed on non-interlocked Point No. 101 (KL point).

Cause: Derailment took place since the point was not clamped properly which led to loco taking two routes.

Staff held responsible: Pointsmen involved in shunting.

Matters brought to light: Dy.SS/Outdoor who is responsible to supervise the shunting operations was not available for duty on the day of incident.

10. **Brief of the accident:** On 25.12.2014. crossing of light engine with Train No. 57554 (ADB-PRLI) was planned at BMBK station of NED Division. The station is having three running lines (one main line and two loop lines) with simultaneous reception facility. 2nd loop was blocked with stabled load and the light engine is programmed to clear that load. SM/BMBK taken 'off' reception signals for light engine on to main line and after its arrival he wanted to shunt the loco onto stabled stock. Till such time the Passenger train should be on Home Signal. But, the LP of Passenger train who was supposed to stop at the Home Signal passed it in 'on' condition and caused SPAD.

Cause: Failure of LP & ALP in not stopping at the Home Signal.

Shortfalls noticed:

- Guard and SM have failed to measure the distance after passing the DN Home Signal.
- SM/BMBK did not properly plan, i.e., he should have received the light engine directly onto stabled stock through Calling-on Signal and the passenger train onto another loop simultaneously.
- SCOR also failed to guide the SM who was fresh to Railway System.

Enquiry report awaited.

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Section “F”
Test Your Knowledge

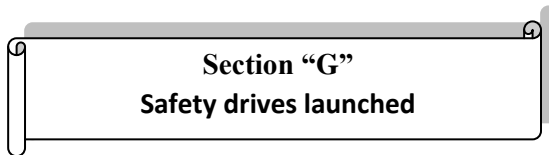
- 1. Which is the first station on Indian Railways to have free Wifi facility?**
- 2. Whenever a new signal is provided or existing signal location is resited, Caution Order shall be given for a period of days and the same information shall be informed throughafter the signal is brought into use to draw the attention of LPs about the change.**
- 3. Additional LP trips may be prescribed for special conditions of working like Automatic Block Territory, important junctions / stations, etc., approval of should be taken.**
- 4. What is the originating freight loading achieved by SCR from April 2014 to December 2014?**
- 5. All passenger carrying trains should run at, even if they are not running late.**
- 6. All railway Officers, Inspectors connected with running of trains, track maintenance staff and Guard shall from time to time ensure that LP of the train do not exceed MPS of the train. However, if he exceeds the MPS / PSR / TSR, they should inform theat the next station and submit a report immediately to &**

7. is responsible to ensure that no person is travelling on the roof of the vehicle not intended for the use of passengers.
8. SWR should be issued afresh once in years or after issue of Amendment slips whichever is earlier and reviewed as and when required.
9. is the authority for admitting a train on non-signalised line.
10. If the LP experiences any abnormal condition on the track over which his train has passed and he considers that the portion of the track is detrimental for safe running of subsequent trains before IB Signal or Automatic Block System, he shall

KEY

1. Bangalore of South Western Railway. Wifi is free of cost for first 30 minutes and for subsequent time, if required on purchase of scratch card available at the Wifi help desk or on line using credit / debit cards.
2. Ten days, SOB.
3. DRM
4. 85.7 MT

5. MPS
6. LP, DOM & DME/DEE.
7. Guard
8. 5 years, 5 amendment slips
9. T. 509
10. Inform the SM and LP of trains which already left station in rear through available means of communication to stop movement of trains. Proceed further only after ascertaining that the SM has clearly understood so as not to permit further movements.



No.safety.387/SD/VOL. IV. October 2, 2014

Sub: 'Special Safety Drive on 'SPAD prevention'.

On 30.9.14, LP of an Express train overshot home signals and side collided with a coach of an Express train at Gorakhpur Cantt station of NE Rly.

In view of this, Divisions are advised to launch a special drive for a fortnight on **SPAD prevention** involving Officers/ inspectorial staff of concerned departments on the aspects mentioned in Annexure enclosed.

In addition to the aspects mentioned in the Annexure the following aspects may also be checked:

- A review of SPAD cases revealed that LPs who have been inducted **departmentally** and who are performing duty after availing **headquarter rest** are more prone to commit SPAD. Hence, performance of such LPs should be closely monitored and they should be sensitized to follow proper safety rules.
- At such stations where positive isolation like sand hump / Buffer stop is not there, during crossing of trains, the SM should be alerted that, he should alter the point at the end from which opposite direction train is planned immediately on arrival of first train. Such stations are to be inspected during the drive and staff working need to be checked and identified for shortfalls.

After completion of drive a compliance report showing details of abnormalities found and action taken may be furnished by 21/10/14.

(S.P.SAHU)
CHIEFSAFETY OFFICER

No.safety.387/SD/VOL. IV.

October 14, 2014

Sub: Special Safety Drive on ‘Joint Inspection of Points & Crossings’.

Boards have observed that during inspections of Zonal Railways, readings of Joint inspection of Points and Crossings by SSEs P.Way and S&T are not recorded properly and compliance of deficiencies are not being monitored. Hence, board directed Zonal Railways to conduct a special safety drive for a month to ensure safe train operations with emphasis on the following aspects:

- (i) The joint inspection register of points and crossings may be checked by AEN and ASTE jointly and as a sample check

measurement to be taken at two points/crossover per station covering at least 50% of the stations under the charge of the concerned SSE to assess the quality of the SSEs inspection and the compliance of deficiencies.

- (ii) Emphasis to be laid on inspection for assessing the condition of the Tongue Rail(whether chipped off, Knife edge, Corrosion), housing of Tongue rail with stock rail(setting up to appropriate number of sleepers),throw of switch, vertical and lateral wear of tongue rail and crossings, condition of fittings of switches, obstruction test, checking of track locking etc. The results should be recorded as per the format enclosed.

As directed by Board, a month long drive may be launched with immediate effect. Officers and Sr. Supervisors from Engineering and Signal departments should be involved in the drive. After completion of drive a compliance report showing details of abnormalities found and action taken may be furnished along with format enclosed by 18.11.2011.

(J.N.Gupta)
Dy.CSO/Engg

No.safety.387/SD/VOL. IV.

October 28, 2014.

Sub: 'Special safety drive on Fire Prevention.'

This month during the last 10 days two incidents of fire were reported in passenger carrying trains. This is causing serious concern. Divisions are advised to arrange drive/joint checks by RPF, GRP and Commercial staff in trains as well as stations, Parcel Offices to check and prevent carriage of inflammable. The drive will be launched for a fortnight with immediate effect with emphasis on the following aspects:

- Check on carriage of gas cylinders, Sigiri/stove, explosive material, crackers, other inflammables in passenger carrying trains.
- Random/Surprise checks by Railway officials in co-ordination with RPF & GRP in trains and at stations of luggage and parcel material before loading.
- Check on smoking by Parcel Porters/Labour in the course of loading/unloading.
- Checks on unauthorized vendors selling Tea/coffee/Eatables by using Sigiris/Stove.
- Checks on Passengers cooking in trains & Station areas.
- Availability of fire extinguishers in working condition and their effectiveness in locos, SLRs, AC Coaches, Pantry Cars. Etc.,
- Intensive publicity in both print and electronic media on the hazards of carrying inflammable and explosive material by trains.
- Publicity in all stations through CCTV and frequent announcement through Public Address System on the hazards of carriage of inflammable articles.
- Banners to be placed both at Entry/Exit gate.
- Adequate and proper maintenance of electrical devices in the coaches as per laid down norms.

Checks for fire in Pantry Cars:

- Proper maintenance and up keep of electrical devices, Boiler, Refrigerator, Chimneys, Wiring systems and Junction boxes etc., in Pantry Cars.
- Working of over- load, over voltage protection devices, use of standard fuses, MCBs, Earthing and proper wiring, insulation especially at joints/junctions etc.,
- Adequate fire suppression measures and proper maintenance in the Pantry Cars. The staff including Pantry Car Staff should be trained for Fire Extinguishers.

- Availability of CBC Keys with all LPs, Guards, Travelling C&W staff and Pantry Cars.

On completion of the drives detailed report on the numbers of checks conducted, irregularities noticed and action taken may be sent to the under signed by 18.11.2014.

Note: It may be noted that U/S 67 of Indian Railway Act and Railway Servant including RPF have powers to cause verification of the goods/luggage carried by the passenger or booked in parcel to ascertain its content. This may widely circulated among all category of train escorting staff.

CHIEFSAFETY OFFICER

No.safety.387/SD/VOL. IV.

November 07, 2014

Sub: Special Drive on 'SPAD' preventions.

Divisions are advised to launch a special drive for fortnight on SPAD prevention involving Officers/inspectorial staff of Power Branch-Mechanical/Electrical and Safety departments on the aspects mentioned hereunder-

- Identify the signal, station and line on which the signals are located on right hand side. These signals should be notified in lobbies through SOB.
- Whether such signals are provided with 'Arrow' mark or not?
- The nominated Loco Inspector must monitor the Loco Pilot upto the destination/crew changing points, if it is a first trip for loco pilot.
- Any remarks passed by the LP regarding the unsafe combination of signals, visibility of signals, etc., in the signal defects register should be viewed seriously for rectification/attention.

After completion of drive a compliance report showing details of abnormalities found and action taken may be furnished to this office.

(S.P.SAHU)
CHIEF SAFETY OFFICER

OPERATING SAFETY DRIVES

No.T.387/TRAFFIC/SPL.DRIVE

Date: 16-10-2014.

Sub: Operating Safety Drive:

1. Use of Emergency Crank Handle during failures of point / signal G&SR.3.51, 3.38(7) and App XI-VI (e)- surprise and test check to ensure staff are conversant.
2. Use of fire extinguishers during fire / unusual –demonstration GR & SR 6.10 and testing.

Several new ASMs and Pointsmen have been inducted into SC Railway through RRB/RRCs. In order to ensure they possess adequate practical knowledge on usages of safety gadgets like crank handle operation and fire extinguishers, it has been decided to hold a Operating Special Drive for 10 days from 18.10.2014 TO 27.10.2014 with emphasis on the following two subjects which have scope to avoid mishaps in emergencies.

1. Use of Emergency Crank Handle during point / signal failures:

- a. The crank handles are properly secured in glass fronted wooden box/case and in sealed condition along with key and padlock of point machine.
- b. Whether the SM & other station Operating Staff are conversant with the procedure of cranking the electric point machine/s or not?

- c. Whether the relevant points are clamped and padlocked after cranking the point machine before permitting movements over that point?.
- d. Whether the SM is making entry in the Crank Handle Register after using crank handle?
- e. Whether the SM is making failure entry in the S&T Failure Register or not?
- f. When S&T Officials attend for the failure, whether the SM is issuing 'failure memo' under acknowledgement and the S&T Officials are in the habit of issuing S&T Disconnection Notice (T.351).
- g. When the S&T Officials require crank handle for testing / maintenance purposes, consent of SM and entry after the work is over is made in the Crank Handle Register or not?

2. Use of Fire Extinguisher:

- a. TIs / Supervisory SMs to organize a practical demonstration of using fire extinguishers kept at stations and other activity centers such as Goods Sheds, Booking Office, Parcel Office, etc.,
- b. Whether the available fire extinguishers are within the expiry date?
- c. Whether the number of fire extinguishers prescribed in the SWR Appendix "E" are adequate and available?
- d. Whether all the station staff especially Operating, S&T and Commercial Department are aware of the correct procedure of using the fire extinguishers?
- e. Whether the station is having the contact telephone numbers of local Civil and Fire Department or not?
- f. Whether the SM is conducting a random check of the above telephone numbers to check whether they are working and responding; and a record is kept to that effect or not?

Operating safety drive involving all Operating Officers and supervisors (TIs & SMs) shall organize for practical demonstrations and make staff conversant after completion of the drive, a detailed

report may be submitted to the under signed in the pro-forma given below **latest by 03.11.2014** for kind appraisal of COM.

Chief Traffic Manager/ G&PP

No.T.387/TRAFFIC/SPL.DRIVE.

Date: 24. 10.

2014

Sub: SPECIAL DRIVE FOR PROPER EXCHANGE OF SIGNAL IN CASE OF DETECTION, OF HOT AXLE & FLAT TYRE AND ROLE OF OPERATING STAFF (SMs, GUARDS, POINTSMEN & GATE MEN).

Ref: COM's Lr.No.T.305/GM Review meeting/2014

Dated: 21.10.2014.

GM HAS EXPRESSED CONCERN OVER CASES OF HOT AXLE REPORTED ON THE ZONE DURING SAFETY REVIEW MEETING HELD ON 20.10.2014 AND INSTRUCTED TO CONDUCT A SPECIAL DRIVE TO ENSURE STRICT EXCHANGING OF "ALL RIGHT SIGNAL" BY OPERATING STAFF "TO DETCECT ANY UNUSUALS LIKE HOT AXLE AND FLAT TYRES".

IT HAS BEEN DECIDED TO LAUNCH A 15 DAYS SPECIAL DRIVE ON THE ABOVE SUBJECT COMMENCING FROM 28.10.2014 TO 11.11.2014. THE DRIVE SHALL BE CONDUCTED BY ALL THE OFFICERS AND SUPERVISORS OF OPERATING DEPARTMENT TO CHECK THE FOLLOWING ASPECTS.

- 1) WHETHER STATION STAFF ARE EXCHANGING ALL RIGHT SIGNALS WITH CREW OF PASS THROUGH TRAIN AND OBSERVING THE TRAIN FOR ANY UNUSUALS LIKE HOT AXLE, FLAT TYRE ETC(.)

- 2) KNOWLEDGE OF OPERATING STAFF AND CREW REGARDING DETECTION OF HOT AXLE AND FLAT TYRES (.)
- 3) WHETHER PROMPT ACTION IS TAKEN AFTER OBSERVING SYMPTOMS OF HOT AXLE AND FLAT TYRE BY THE CONCERNED STAFF (.)
- 4) NO.OF CASES WHERE THE TRAIN IS ALLOWED TO RUN FURTHER AFTER DETECTION THE SYMPTOMS OF HOT AXLE AND FLAT TYRE, WHETHER THE TRAIN HAS DESPATECHED WITH / WITHOUT CHECK.

AFTER COMPLETION OF THE DRIVE THE RESULTS OF THE DRIVE SHOULD BE SENT TO THE UNDERSIGNED.

Chief Traffic Manager/ G&PP

**Section “H”
Accident Statistics**

- 1. Consequential (RB) accident increased by 67% (5 against 3).**
- 2. Total accidents increased by 24% (36 against 29) (SC=10, HYB=7, BZA=6 & GTL=6).**
- 3. Accidents increased on HYB Division (7 against 1), BZA Division (6 against 3), GTL Division (6 against 5).**
- 4. Incidences of SPAD increased by 60% (8 against 5).**
- 5. Yard accidents increased from 10 to 19 (by 90%) (SC=7, GTL=6, GNT=1, BZA=2, HYB=2 & NED=1).**
- 6. Lapses of LP has gone by 38% (11 against 8), Division-wise break up is SC=4, BZA=2, GNT=1, GTL=2, HYB=1 & NED=1.**
- 7. Mechanical failures increased by 300% (4 against 1).**
- 8. P. Way staff failures increased from 3 to 5.**
- 9. Traffic lapses increased from 2 to 3.**
- 10. Accidents due to human failure increased from 18 to 30 (67%).**