

**SOUTH CENTRAL RAILWAY**

# **VIGIL**

**QUARTERLY SAFETY BULLETIN NO.4**

**DECEMBER – 2020**

## INDEX

<b>Sl. No</b>	<b>Section</b>	<b>Subject</b>	<b>Page No.</b>
1	<b>A</b>	Extracts of RB letters	1 - 2
2	<b>B</b>	Important rules	3 – 4
3	<b>C</b>	Latest amendments	5 – 31
4	<b>D</b>	Checklist– Loco	32 - 34
5	<b>E</b>	Accident cases	35 – 39
6	<b>F</b>	Test your knowledge	40 – 41
7	<b>G</b>	Safety drives	42 – 42
8	<b>H</b>	Accident statistics	43 - 43

My dear Railway men

- In the third quarter of this financial year 2020-21, there was no consequential train accident and 16 other than consequential train accidents on this Railway when compared to 3 and 16 respectively in the previous financial year for the same period i.e. October to December. Every field Official shall take all preventive measures to sustain this performance
- Number of indicative accidents has sustained to zero when compared to 0 in the 2020-21 second quarter.
- The number of Yard Accidents has decreased from 10 during second quarter of 2020-21 to 2 during third quarter of 2020-21.
- For the month of October, there was no consequential train accident, one other train accident and one yard accident.
- For the month of November, there was no consequential train accident, one other than consequential train accident and two yard accidents.
- For the month of December, there was one consequential train accident and one other train accident.
- In regard to the safety performance of Divisions, accidents / unusual incidences in SC-2, BZA – 1, GTL – Nil, HYB – 1, NED – 1, GNT – 1.

I hope that this booklet which contains important RB letters that are helpful in updating the knowledge of all field Officials, contribute for understanding the details of accidents, test your knowledge with key statistics etc.,

(M.Ravindranath Reddy)  
Principal Chief Safety Officer

**Section “A” KNOWLEDGE**  
**Extracts of Railway Board letters**

No.2020/M (L)/731/4 New Delhi, dated. 03 .09.2020

Sub: Collision of Train No. 47178 MMTS with Train No.17028 Express at Km 7.742 Kacheguda station of Secunderabad-Dhone section of Hyderabad Division of South Central Railway at about 10.40.hrs on 11.11.2019.

Ref: Dir./Safety (IV)'s Note No. 2019/Safety (A&R)1/10 dated 18.08.2020.

CRS/ South Central Circle has submitted his final report on the above accident. Recommendation at Para 9.6 read as under-  
Para 9.6 —

Complaint about problem in VHF set was recorded by Loco Pilot in CMS in April 2019. It was not attended as CCC, posted in May 2019, was not conversant with operation of CMS as CCC. Before posting CCC, it shall be ensured by Railway Administration that the employee is fully conversant with operation of CMS as CCC. (Para 6.34 & 7.6.10)

All Zonal Railways are requested to take necessary action on the above recommendation.

(Mannish Jain)  
Exec.Dir.Mech.Engg.(Tr.)  
Railway Board

No. 2009/CE-II/Accident/Policy New Delhi, dated 20 .08.2020

Sub: Negotiability of BLC/BCLC Container wagons on loops. Ref: Board letter no. 2009/CE-II/Accident/Policy dated 09.02.2016

Vide above reference, operation of BLC/BCLC container wagon on second and subsequent loops was restricted by Board, owing to reporting of large number of derailment cases involving these wagons while negotiating reverse curves due to multiple crossovers/turnouts, longer length of crossovers etc, by Zonal Railways.

Certain ambiguity is existing over permissibility of above container trains over the 1st loop of yards over certain Zonal Railways. The issue of Container train (BLC/BLCM etc) entry on 1st/2nd Loop has been examined in Board and it is clarified that the restriction imposed for operation of BLC/BCLC container wagon vide letter under reference above is for second and subsequent loops only. These wagons can be operated over 1st loops of different yards by Zonal Railways.

Necessary action may be taken by Zonal Railways accordingly.

(A.K. Si hal)  
Principal Exec. Dir. Civil Engg.(Planning)

\*\*\*

## **Section “B”**

*Some important instructions – G.R/S.R. 4.20*

### **4.20. Manning of engine in motion.—**

**(1) Except when otherwise provided by special instructions, no engine shall be allowed to be in motion on any running line unless the Loco Pilot as also the Assistant Loco Pilot are upon it.**

**(2) Subject to the provision of sub-rule (3), in no circumstances shall a person other than the Loco Pilot or a railway servant duly qualified in all respects, drive an engine on any running line.**

**(3) If a Loco Pilot becomes incapacitated while the engine is in motion, the Assistant Loco Pilot, if duly qualified, may work the train to the next station cautiously and where the Assistant Loco Pilot is not duly qualified, he shall bring the train to a stop and send a message to the Station Master of the nearest station to make arrangements for a Loco Pilot to take over the train, and for so doing he may take the assistance of the Guard.**

S.R.4.20.1. Shunters may be allowed to perform shunting inside station limits, but, except under special instructions issued by the DRM, they shall not be allowed to work any train outside station limits.

S.R.4.20.2. No person must be allowed to work as Loco Pilot unless he is duly qualified in initial/refresher training (both transportation and technical) and holds valid certificate of competency for transportation, issued by the Principal/ZRTI/ MLY and holds valid certificate of competency for technical, issued by DME/P or Sr.DME for Diesel or Sr.DEE/TRSO for Electrical, of

the concerned division. The booking official is responsible for complying with this rule.

**4.21. Driving an electric train.—**

**(1) In the case of electric trains, the Loco Pilot shall be in the leading driving compartment when the train is in motion or when the train is standing on any running line except as otherwise prescribed in these rules.**

**(2) (a) In the case of a single or multiple unit train, if the driving apparatus in the leading driving compartment becomes defective, the train shall be driven cautiously from the nearest driving compartment which is serviceable; in this event, the Guard shall travel in the leading driving compartment and shall convey the necessary signals to the Loco Pilot, the Guard shall also sound the horn or whistle as necessary and apply the brake in case of emergency and shall be responsible for stopping the train correctly at signals, stations and obstructions.**

**(b) In the case of an electric engine, if the leading driving compartment becomes defective, the train shall be driven from the trailing driving compartment by the Assistant Loco Pilot if he is duly qualified to drive; and the Loco Pilot shall remain in the leading driving compartment, and shall be responsible for the correct operation of the train.**

SR.4.21.1 All the instructions given under GR 4.21(1) & (2) (b) which are applicable to electric engine shall also be applicable for working of trains by Diesel Engines having twin cab.

SR.4.21.2 Assistant Loco Pilots may be allowed to drive the engines/trains on certain sections as specified by the DME/DEE (RS) under direct supervision of a Loco Pilot so that in case of emergency the Assistant Loco Pilot can be authorised to drive the train at a restricted speed not exceeding 40 KMPH up to the nearest point where he can be relieved.

\*\*\*



**Section “C”  
Latest Amendments**

**Amendment Slip no. 37 to G&SR - 2008 of SCR.**

Item No:1

SR 7.01. 1. I. 1. (a) in page no. 181 is amended as –

a) Lingampalli – Secunderabad Jn. – Ghatkesar.

Item No:2

SR 7.01. 1. I. 2. (b) in page no. 181 is amended as –

Secunderabad Jn.– Medchal.

Item No: 3

Number the existing section Vijayawada Junction – Krishna Canal Junction in SR 7.01. 1. I. 3. as (a) and add the following section as (b) under SR 7.01. 1. I. 3 in page no. 181.

Vijayawada North East Cabin (BZA NEC) – Gannavaram

Item No:4

Following sections are added under SR 4.35.5.1 in page no. 124 as (iv) and (v) and all the sections are organised as per the Divisions they come under by adding Divisions as heads:

(iv) Secunderabad Jn.–Ghatkesar section of Secunderabad Division;

(v) Secunderabad Jn. – Medchal Section of Hyderabad Division

**Amendment Slip no.06 to Accident Manual – 2012 of SCR of 31.08.2020**

Following amendments to Accident Manual – 2012 of SCR that have been issued for implementation in SCR.



Item No: 1 of amendment slip No.6 to Accident manual

Rule no. 501.2 in Chapter V (in page no. 45) is amended as follows:  
501.2 Action by Safety Team/Accident In-charge. On arrival at site, the safety team will take charge of the locations where evidence and clues are available. The safety team will thoroughly examine the site and come to some tentative conclusion about the probable cause of the accident. Careful observation of clues and a comprehensive record thereof is vital for accident enquiry. In addition, a comprehensive record of track and rolling stock parameters and operating features is required for investigation of derailments. The statements to be recorded and joint measurements to be taken. The following steps also to be taken.

Item No: 2 of amendment slip No.6 to Accident manual

Add the following as point iii) to Rule 501.2 in Chapter V in page 45 and renumber the existing point nos. iii) – xii) as iv) – xiii):

iii) Speed recorders and event recorders in the locomotives shall be frozen immediately post the accident.

Item No: 3 of amendment slip No.6 to Accident manual

Main para of Rule no. 501.2 (v) (vi after amendment vide item no. 2) of Chapter V in page no. 45 is amended as following:

In case the accident takes place within station section, observations of SM's Panel need to be recorded. SM's control panel shall be frozen till the time position of the knobs, switches, points & crossings etc. are jointly recorded. It is the responsibility of the concerned Controlling Officer/Safety Officials to ensure freezing of the above. The team will note down the following:

Item No: 4 of amendment slip No.6 to Accident manual

Insert the following as sub-rules from xiv) to xxii) under rule 501.2 in Chapter V in page no, 47 duly renumbering existing sub-rules from xiii) to xvii) as xxiii) to xxvii):

- xiv) The joint measurement to be submitted by senior supervisors shall not be complete till all the measurement of rolling stock and track as per proforma have been recorded. Only completed joint measurement with reference to rolling stock and track shall become a document to be relied upon by the enquiry committee for drawing conclusion regarding cause of accident.
- xv) The photographs of the concerned sections of track and part of rolling stocks shall be taken in detail to show all the details the accident and annexed in the enquiry report. ART personnel should be trained for identifying such relevant part of track and rolling stocks involve in the accident.
- xvi) In case of derailment of passenger trains causing injury to passengers, video recording of the concerned part of track and rolling stock shall be carried out by nominated ART personnel, trained for the purpose.
- xvii) Photography & Videography of accident site shall be with great care & precision, similar to a crime scene photography/videography. ART personnel nominated for this shall be suitably trained for the purpose. The photographs, videos should be self-explanatory such that relevant conclusion can be drawn.
- xviii) Site sketch of the derailment/accident location shall be prepared giving due care that all the relevant items are included along with the dimensions. A sample sketch is attached for the guidance.
- xix) Preservation of relevant clues, documents & photographs/videography of the accident scene shall be done under supervision of Safety Officials of the Division.
- xx) M&C report from RDSO must also be part of accident enquiry report in case accident is attributed to breakage of any component of track or rolling stock.

- xxi) If rail/weld failure is suspected to be cause of derailment, assessment of impact loading to which the rail/weld was subjected to prior to its failure becomes important. In such cases, WILD data for few preceding trains shall be analysed for critical alarms and any critical alarm shall be brought out and deliberated by enquiry committee.
- xxii) Safety official shall take into custody of all the relevant documents, broken parts etc.

Item No: 5 of amendment slip No.6 to Accident manual.

Add the following as note under rule no. 503 in Chapter V in page 49:

**Note: Typical sketch of the Accident site is given at 508.**

Item No: 6 of amendment slip No.6 to Accident manual

Add the following as sub-rules numbering i) to iv) under rule no. 9.02.3 in Chapter IX in page 100, duly renumbering the existing sub-rules i) to vii) as v) to xi):

- i. There are two broad categories of derailment.
  - a) Sudden derailment is caused by wheel set jumping of the rails. Such a derailment indicates that the derailing forces were high enough to suddenly force the wheel off the rail. These are typically caused by failure of vehicle/track components, obstruction on track, entanglement of hanging parts of rolling stock etc. These derailments are characterized by a short mark on rail table between Point of Mount and Point of Drop. In some cases the Point of Mount may even be absent.
  - b) Derailment by flange climbing is caused by wheel mounting the rail in a relatively gradual manner. It indicates that the derailing forces were powerful enough to overcome the normal stabilizing forces, yet not sufficient

to cause a sudden derailment. Such derailments are characterized by a longer mark on the rail table between Point of Mount and Point of Drop. Track and rolling stock parameters and operating features influence the rail-wheel interaction forces and hence, their complete record and a comprehensive analysis is required to arrive at the mechanism of derailment. Cause and consequence of derailment are required to be differentiated through this comprehensive analysis.

- ii. Derailment proneness increases with increased Lateral wheel force, reduced Vertical wheel load (Offloading) and increased Positive Angularity of wheel. Derailment proneness becomes substantially higher in case of axle moving with a persistently positive angularity. Track and rolling stock parameters and operating features should be critically analysed for their contribution towards these causes. In case of derailments in curve, proper functioning of Bogie rotation system to ensure undue angularity needs close examination. Contribution of track twist and spring defects and twist in bogie frame/vehicle under frame to derailments caused by wheel Offloading needs to be analysed. In case of derailments at high speed, parameters affecting vehicle oscillation and damping thereof needs a close analysis.
- iii. While analysing the mechanism of derailment, relative contribution of track and rolling stock parameters to the rail-wheel interaction forces needs a comprehensive analysis. Reference should be made to the safety limits/ Maintenance limits specified in IRPWM/IRCA/Maintenance Manuals.

Locating and examining the wheel mounting mark(s) at the initial point of derailment is very important for identifying the category of derailment. Precise measurements and critical and detailed examination of the wheel mounting marks should be made e.g. their length, strong or faint, broken or continuous, single or multiple, etc.

Photographs should be taken of such marks, not only on the rail, but also on the fastenings, sleepers and ballast.

Item No: 7 of amendment slip No.6 to Accident manual

Add the following as note - 2 under rule no. 902.5 in Chapter IX in page no. 101.

(2) No enquiry shall be completed before the complete measurement of rolling stock and track is available and made part of the enquiry report. Enquiry Committee may get additional measurements done as per requirement of the derailment case.

Item No: 8 of amendment slip No.6 to Accident manual

Pro-forma for measurements of Track vide 504.1 and 5.4.2; Locomotive (Diesel & Electric) vide 505 & 505.1; Coach involved in Accident vide 506 and Wagon involved in accident vide 506.1 are amended as given in the Annexure-I.

Item No: 9 of amendment slip No.6 to Accident manual

Add the Drawing at Annexure-II as 508.

## Annexure-I to AS-6 for revised pro-forma for measurement of Track, Locomotive, Carriage and Wagons:

### 504.1 Pro-forma for Track Measurement (PART-A)

Soil			Type of formation	Rain fall	Ballast		
S. No	Type (Sandy/Loamy/clay, Moorum Black Cotton etc.)	Condition (firm, wet, slushy etc.)			Type (Stone, Moorum Sand, Ash etc.)	Depth below sleeper bottom in centimetres, stating whether clean or caked.	Drainage
1	2	3	4	5	6	7	8

Ballast (contd.)				Sleepers				
Width of shoulders in cms. from outside of..				Type (wooden CST-9, steel trough, PSC etc.)	Condition (New, Second hand, damaged, unserviceable etc)	Density	Square or not	Packing (Loose or sound)
Rails		Sleeper end						
Left	Right	Left	Right	13	14	15	16	17
9	10	11	12					

Rails			Rail fastenings	
			Dog/Screw spikes, keys, tie bars cotters, loose jaws etc.	
Weight (60 Kg/ 52kg/90R/75Retc) (Year of Manufacturing)	Condition of wear (attach rail profile if wear heavy)	GMT Carried	Number per sleeper seat	Condition: (Tight or loose or missing in each

				sleeper)
18	19	20	21	22

Rail Joints			General remarks about cracks or fracture of flash-plates, fish bolts and other components	Description of anti-sabotage measures like reverse jaws, welded rails etc.
Condition: (Hogged, battered, low etc.)	Staggered or square	Creep - direction and extent of creep, type of creep anchors used with numbers per rail in the affected section)		
23	24	25	26	27

To be jointly signed by		
SSE/SE (C&W)	TI/SS (Traffic)	SSE/SE (P. Way)

Location of point of mount		Location of point of Derailment	
whether on straight, curve or transition	whether on a falling grade, level, or rising grade and/or on sag	whether on straight, curve or transition	whether on a falling grade, level or rising grade and /or on sag
28	29	30	31

- Note:
- (1) Left and right are with respect to direction of the train movement;
  - (2) The data in Col.2 to 26 need not be collected when the defect is obviously and indisputably on account of sabotage and/or obstruction on track;

- (3) Only broken track material which is not indisputably to be broken after the accident should be included in Col.26 and should be preserved;
- (4) Col.27 needs to be filled in only when there is a suspicion about sabotage being the cause of derailment and
- (5) Sag extends 90 metres on either side of theoretical junction of the grade lines columns 29 and 31.

To be jointly signed by		
Supervisor (P.Way)	Supervisor (Traffic)	Supervisor (C&W)

#### 504.2 Pro-forma for Track Measurement (PART-B)

Station No.	Distance apart (metres)	Gauge slack or tight from the exact <b>in loaded</b> condition	Cross level (mm) Under <b>Loaded</b> condition	Marks on sleeper or rail top	Grinding or rubbing marks on rails	Examination of alignment for perceptible kinds of tack distortion in the vicinity of the point of mount and drop
1	2	3	4	5	6	7

Subsidence of track	Versine in mm <b>in loaded</b> condition		Remarks regarding length of transition, degree of curve and specified super	Longitudinal level to be recorded in the case of MG and NG and in case of sags or curves
	On 20M. or 10M. chord depending on the practice	On 10M. or such shorter Chords as considered necessary for		



	prevalent on the Railway for flat curves more than 600 M. radius.	sharp curves (less than 600 M. radius on B.G. and M.G.	elevation general alignment etc.	
8	9	10	11	12

- Note: (1) The point of mount should be marked with station number '0' and the stations shall be numbered serially as (+) for measurements ahead of site of derailment and (-) for measurements in rear. In case of sudden derailment point of drop will be considered as '0' station. In case of gradual derailment point of mount will be treated as '0' station.
- (2) The cross level will be measured on the left rail only as determined from the direction of movement.
- (3) Normally measurement will be taken at stations three meters apart for a distance of 45 metres on either side of '0' station if the cause of derailment is indisputably known, otherwise they will be taken for a distance of **100** metres in rear and 45 meters ahead of zero station.
- (4) Where necessary, measurement for columns 3, 4 and 5 may be taken additionally at individual sleepers up to 9mts in rear of point of derailment.
- (5) This Pro-forma need not be filled when the cause of derailment is obviously established as due to sabotage, obstruction on track, broken axle, and/or spring having fallen off prior to point of derailment, etc.
- (6) Longitudinal levels should be recorded for 300 metres in rear and 100 metres in front, in case of straights at the middle of each rail and at versine recording points on curves at @ 20/10 metres intervals.
- (7) \*If the locomotive has also derailed, then one supervisor from loco branch will also sign the measurement pro-forma/sheet.**
- (8) Site sketch of the derailment/accident location shall be prepared giving due care that all the relevant items are included along with the dimensions. A sample sketch is given in the following page for the guidance.**

To be jointly signed by
-------------------------

Supervisor (P.Way)	Supervisor (Traffic)	Supervisor (C&W)	<b>*Loco Inspector (when loco derails)</b>

**505 Proforma for measurement of Locomotive (Diesel & Electric):**

Proforma to be filled in case of accident/derailment when loco is involved in accident.

(Information to be furnished by the Mechanical / Electric department):

**505.1. Basic information:**

- (a) Date of accident :
- (b) Train number :
- (c) Loco Class :
- (d) Loco Number :
- (e) Locomotive manufacturing year and place :
- (f) Base shed of Loco :
- (g) Date &Place of last POH :
- (h) Kilometres earned after last POH :
- (i) Date &Place of last major inspection :
- (j) Date &Place of last schedule inspection :
- (k) Whether any schedules are overdue? :

505.2. Give brief particulars of the safety items not provided or provided but missing/not working:

Whether locomotive is provided with:

Safety fittings	Provided/ working	Provided/ Not working	Not provided
Head light			

Speedometer			
Speed recorder			
Flasher light			
Horn			
Brake system			
<b>VCD</b>			

To be jointly signed by		
Supervisor (C&W/Loco)	Supervisor (Traffic)	Supervisor (P.Way)

**505.3. Check and record the observations as follows:**

- (a) Position of control handles, cut-out cocks etc. after the accident.
- (b) Functioning of brake synchronizing valve - whether working or not.
- (c) Position of brake blocks after the accident - whether applied or not.
- (d) Condition of cattle guard.

Any sign of seizure of roller bearing in axle box including condition of its components.

- (e) Condition of Pivot and Side Bearer arrangement of bogie including obstruction to Bogie rotation.
- (f) Condition of Fiction Damper components/Hydraulic Dampers.
- (g) Condition of Traction Rod/Guide Rod including its connection.
- (h) Condition of Traction Link including its connection.
- (i) Condition of Lateral Stop components between Bogie and Loco body under frame.

- (j) Any other observation in respect to mechanical defect of the Locomotive, which might have any bearing on safe running of Loco.

Note: 1. Defective or broken material should be sent to CMT for testing, if necessary.

**2. Measurements of items e-j shall be done as per site condition.**

To be jointly signed by		
Supervisor (C&W/Loco)	Supervisor (Traffic)	Supervisor (P.Way)

**505.4. Proforma for measurement of wheels for all classes of locomotives with wheel gauge (04 locations applicable for Bo-Bo Locos)**

S.No.	Description	Observed value (in mm)			Remarks
			LH	RH	
1.	Particulars of axle (ID No.)	1.			
		2.			
		3.			
		4.			
		5.			
		6.			
2.	Diameter of wheel at tread		LH	RH	
		1. 1			
		2. 2			
		3. 3			
		4. 4			
		5. 5			
3.	Wheel flange thickness		LH	RH	
		1			
		2			
		3			
		4			
		5			
4.	Wheel Root wear		LH	RH	
		1			
		2			
		3			
		4			
		5			
		6			

**505.4. Proforma for measurement for wheels for all classes of locomotives with wheel gauge (04 locations applicable for Bo-Bo Locos) (Continued)**

S. No.	Description	Observed value (in mm)	Remarks
--------	-------------	------------------------	---------

5.	Tread wear		LH	RH	Tread wear should be measured from tread at 63.5 mm from wheel gauge face (from the back face of flange) in BG and 57 mm from wheel gauge face (from the back face of flange) in MG.
		1			
		2			
		3			
		4			
		5			
		6			
6.	UST of axle: Give the date of last UST test done		LH	RH	Information is relevant in case of axle breakage.
		1			
		2			
		3			
		4			
		5			
		6			
7.	<u>Wheel gauge</u> For checking wheel gauge, three measurements at equal spacing on the inner periphery of the two wheels on the same axle is to be recorded. Check for bent axle if any.	1			All measurements shall be taken on a level tangent uncanted track. Information is relevant in case of wheel disc shifting /bent axle only. For safety, similar limits as applicable for track gauge are relevant for wheel gauge also.
		2			
		3			
		4			
		5			
		6			

- Note: 1. Wheel number one is the outer end axle of truck under the short hood and wheel count increases towards the Long hood on diesel loco, where as for Electric loco, wheel number one is the outer end axle under cab – 1 (cab – 1 is that side of the loco which has the compressors and cab – 2 is that side of the loco which has the ARNO converter) and wheel count increases towards the cab –2
2. The measurements of wheels are to be done using wheel gauges to RDSO drawing No. SKDL-3592 for all BG locomotives except

WAP5 Locos. For WAP5 locos RDSO's drawing No. SKDL 4446 and SKDL 4447 may be followed.

3. All measurements are to be taken on a level, uncanted track at the nearest yard.
4. Service limits given in the Maintenance Manual are for good maintenance practice and these are not safety limits. However, the measured values shall be compared with the service limits and degradation in values shall be discussed while finalising the findings.

<b>505.</b>	To be jointly signed by		
	<b>5</b>		
	Supervisor (C&W/Loco)	Supervisor (Traffic)	Supervisor (P.Way)

**Pro-forma for measurement of Electric and Diesel Locomotives after Accident (Locomotives, which are not mentioned in this Pro forma, may be measured in similar manner)**

S. No.	Description		Observed value (in mm)	Remarks
1	Buffer/coupler height Measurement of parameters such as buffer length etc may also be done to check possibility of buffer entanglement.			1 All measurements shall be taken on a level tangent un-canted track. 2 This measurements is required to be taken only in case of trailing stock is with buffers.
2	Lateral clearances	End Axles (1,3,4&6)		
		Middle Axle (2&5)		
3	Lateral clearances	End Axles (1,2,3&4)		Applicable for Bo-Bo locomotives only.
4	Longitudinal clearances			Except WDP3A, WDG4,

	between axle box and bogie pedestal liner – (for all axles)		WDP4, WDP4B, WAP5, WAP7, WAG9 locomotives.
5	Longitudinal clearances between axle box and bogie pedestal liner – (for middle axles)		Applicable for WDP3A Locomotives only.
6	Height of Rail Guard from rail level.		
7	Condition of suspension Spring i.e., normal or broken afresh or old fracture or deformities occurred after derailment due to sudden impact.		
8	Deflected height of coil spring after re-railing on level, uncanted track.		
9	Condition of Rubber/Elastomeric Spring Assembly at the Secondary stage.		

Note: Measurement of items 8&9 on will be done as per site condition.

**506**

**Prof  
orm  
a  
for**

To be jointly signed by		
Supervisor (C&W/Loco)	Supervisor (Traffic)	Supervisor (P.Way)

**measurement of Coach Involved in Accident:**

Note: Details regarding all derailed vehicles should be given except:–

1. (i) Where vehicles have derailed due to locomotive derailment.  
(ii) When the obvious or indisputable cause is sabotage or an obstruction on the track or broken axle or wheel.
2. Particulars for each derailed vehicle should be given in one sheet. Information against columns Nos.(5), (6), (7), (14), (50) and (51)



should invariably be given for adjacent coaches on the same sheet.

3. Front and Rear, left (L) and Right (R) are with respect to direction of movement.
4. For an obvious case of derailment such as a broken axle, spring dropping off on run, and/or some part of under gear hanging loose and causing obstruction, only relevant particulars need to be filled.
5. Relevant details of adjacent vehicles should also be given if cause of derailment is not apparent.

S.No.	Date of incident & Time	Train No.	Details of BPC along with the name of station where issued and Engineer (C &W) who issued it.	Vehicle No.	Type	Tare in tones	carrying capacity in tones
1	2	3	4	5	6	7	8

Built date	Return date	POH details	Station		Position from engine	Wheel gauge in mm (to be measure at three locations) measured in empty condition at the horizontal plane passing through the centre of the axle.
			From	To		
9	10	11	12	13	14	15

To be jointly signed by		
SSE/SE (C&W)	Supervisor (Traffic)	SSE/SE (P.Way)

**506 Proforma for measurement of Coach Involved in Accident (continued):**

Wheel diameter		Any indication of bent axle or wheel having shifted on axle	Wheel and axle face particulars (in case of breakage of any wheel/axle)		Stamping particulars on wheel disc regarding manufacturer/ RA/RD (in case of breakage of any wheel/axle)		Observations after measuring the profile with wheel defect gauge (Good/Rejectable)	
Measurement.	whether below condemning size(Yes/No)		Axle face particulars	Ultrasonic particulars of the hub of the disc			L	R
16 (i)	16 (ii)	17	18	19	20		21	22
			1L	1L	1			
			1R	1R	1			
			2L	2L	2			
			2R	2R	2			
			3L	3L	3			
			3R	3R	3			
			4L	4L	4			
			4R	4R	4			

Roller bearing (To be recorded in case of any abnormalities observed in Roller bearing/Axle Box)			
Condition of axle box, rear and front covers/end cap (FIAT)	Condition of face cover plate	Condition of bearing seal & studs/locking plate and bolts (FIAT)	Condition of Roller Bearing and its components
23	24	25	26

Spring and Spring Gear						
Condition of Coil suspension spring i.e. Normal/ Fractured (old/fresh)	Condition of Rubber spring i.e. Normal/ Cracked including length of crack (for LHB only)	Condition of Air Spring including leakage in piping	Deflected height of Coil spring after re-railing on a level uncanted track	Vertical clearance (for ICF)		
				Crown clearance	Bogie frame – Bolster clearance	Body – Bogies frame clearance
27	28	29	30	31	32	33

To be jointly signed by		
SSE/SE (C&W)	Supervisor (Traffic)	SSE/SE (P.Way)

**506 Proforma for measurement of Coach Involved in Accident (continued):**

Condition of Rubber Disc and Bump Stop of Primary Suspension (for LHB)	Height of Bogie Bolster base plate from rail level (for LHB)
34	35

Condition of Bogie Components			
Condition of Hanger (for ICF)	Condition of Equalizing Stay (for ICF)	Condition of Anchor Link (for ICF)	Condition of Control Arm, Rubber element and Bore (for LHB)
36	37	38	39

--	--	--	--

Damping System		
Condition of Axle Guide Cum Dash Pot including Oil level (for ICF)	Condition of Hydraulic Dampers	Condition of Anti Roll Bar (for LHB)
40	41	42

System of Bogie Rotation and Clearances					Condition of Grounding cables, Wheel Slip Protection (WSP), and Speed sensor (for LHB)	Condition of Brake Gear Assembly
Condition of Centre Pivot including verticality of Pivot Pin (for ICF)	Condition of Side Bearer including Oil level and Wear (for ICF)	Condition of Longitudinal/ Lateral flexibility of Secondary Spring (for LHB)	Clearance between Traction Centre and Longitudinal/ Lateral Bump Stop (for LHB)	Remarks regarding free movement of bolster and pivot and their condition		
43	44	45	46	47	48	49

Buffer/Coupler height (to be taken on a level uncanted track after uncoupling and re-railing) (in mm)		Condition of Side Buffers Working, dead, drooping, entanglement	Details of broken parts giving location w.r.t. point of mount and derailment and whether breakage	Any other defect in the vehicles which may have contributed to or caused the derailment such	List of Damages to the Coach due to accident	Other Observations considered relevant to derailment
Front	Rear					

			considered due to accident.	as condition of coupler, draft gear pocket, shearing plates etc.		
50	51	52	53	54	55	56

To be jointly signed by		
SSE/SE (C&W)	Supervisor (Traffic)	SSE/SE (P.Way)

**506 Proforma for measurement of Coach Involved in Accident (continued):**

- Note:**
1. The wheel gauge is to be measured at the horizontal plane passing through the centre of Axle.
  2. The wheel profile is to be checked with tyre defect gauge only (Ref:- IRC A PT. IV Rule no. 2.95, 3.2.2 and 54.22.1, Plate No. 45 to 53).
  3. Measurement of item no. 5 of opening note, item no. 24, item nos. 28-49, item no. 54 and item no. 56 shall be done as per site condition.

**506.1 Measurement Table for Wagon Involved in Accident:**

Note: Details regarding all derailed vehicles should be given except:-

1. (i) Where vehicles have derailed due to locomotive derailment.  
(ii) When the obvious and indisputable cause is sabotage or an obstruction on track.
2. Front and rear and left (L) and right (R) are with respect to direction of movement.
3. For an obvious cause of derailment such as broken axle, spring dropping off the run, and/or some part of under gear hanging

loose and causing obstruction, only relevant particulars need be filled.

4. Particulars for each derailed vehicle should be given in one sheet. Information against columns (5), (6), (8), (16), (17), (21), (22) should invariably be given for adjacent wagons on the same sheet.
5. Relevant details of adjacent vehicles should also be given if cause of derailment is not apparent.

S.N o.	Date of Incident & Time	Train No.	Details of BPC along with the name of station from where it is issued and of engineer (C&W) who issued	Wagon No.	Type	Mech. Code	Tare in Tonnes	Carrying capacity and axle load	Build Date
1	2	3	4	5	6	7	8	9	10

Return Date	POH Particulars		ROH Particulars		Payload in Tonnes		Commodity loaded and remarks regarding uneven loading (give sketch for details of uneven loading)
	Date	Shop	Date	Depot	From Labels	From Actual Weighment	
11	12	13	14	15	16	17	18

To be jointly signed by		
SSE/SE (C&W)	Supervisor (Traffic)	SSE/SE (P.Way)

**506.1 Measurement Table for Wagon Involved in Accident (contd):**

Station		Position from Engine	Buffer/ Coupler height
From	To		(i) Measure Buffer/Coupler height after uncoupling and re-railing on uncanted level track, (ii) Record whether there is buffer entanglement (Yes/No)
19	20	21	22
			End 1L
			End 1R
			End 2L
			End 2R

Wheel gauge in mm *(taken at three places)	Observation after measuring the profile with tyre defect				
	28				
27					
1		Thin flange	Sharp flange	Worn out root	Deep flange
	1L				
2	1R				
	2L				
3	2R				
	3L				
4	3R				
	4L				

	4R			
Wheel and Axle face Particulars(In case of breakage of wheel/axle)				
Axle face particulars	Ultrasonic particulars on the hub of the disc	Stamping particulars on wheel disc regarding Manufacturer/RA/RD	Wheel diameter (i) Measurement (ii) Record whether below condemning size (Yes/No)	
23	24	25	26	

- Note:
1. The wheel gauge is to be measured at the horizontal plane passing through the centre of the axle.
  2. The wheel profile is to be checked with tyre defect gauge only (Ref:- IRCA Pt. III Rule no. 3.2.2(d) and 4.18.1, Plate No. 57 to 66)

To be jointly signed by		
SSE/SE (C&W)	Supervisor (Traffic)	SSE/SE (P.Way)

### 506.1 Measurement Table for Wagon Involved in Accident (contd):

Roller bearing (To be recorded in case of any abnormalities observed in roller bearing/Axle Box)		
Condition of face cover plate	Condition of locking plates & studs	Condition of roller bearing and its components
29	30	31

Axle box (for IRS stock/UIC) (To be recorded only when failure of plain bearing is involved as a cause)				
Brass thicknessmm.	Condition of box and brass	Condition of sole plates	Condition of journals	Clearance between brass and collar of journal in (mm)
32	33	34	35	36

Axle guard (for IRS/UIC stock) (Contd.)
-----------------------------------------



Lateral clearance between axle box and axle guard in (mm)	Whether axle guard can work clear of axle box	Are the axle guards bent or otherwise damaged to prevent free movement of axle box	Remark regarding bridle bar
37	38	39	40

Clearances for Casnub Bogie (Corresponding measurements to be taken for IRS/UIC Bogie)			
Type of Bogie	Lateral clearance between side frame & bolster in mm	Lateral clearance between side frame & axle box adopter in mm	Longitudinal clearance between side frame & axle box adopter in mm
41	42	43	44

Spring and Spring Gear						
Any Broken/cracked/missing/clearance of shackle and shackle pin and general condition (for UIC/IRS)	Thickness of packing plate under spring seat in mm	Remarks whether any spring eye touches sole bar (for laminated spring only)	Condition of suspension springs i.e. normal, broken afresh and old fractured or deformities occurred after derailment due to sudden impact	Camber of spring in mm after re-railing on a level uncanted track (for laminated spring only)	Deflected height of coil spring after re-railing on level, uncanted track (for Casnub)	Condition of elastomeric pad above adaptor (for Casnub)
45	46	47	48	49	50	51

To be jointly signed by

SSE/SE (C&W)	Supervisor (Traffic)	SSE/SE (P.Way)
--------------	----------------------	----------------

**506.1 Measurement Table for Wagon Involved in Accident (contd):**

Bogie		
Condition of Centre Pivot including lubrication and wear (for Casnub)	Condition of Side Bearer including Vertical clearance at side bearers (for stock having clearance type side bearers only)	Condition of Friction Snubber Wedge Assembly (for Casnub)
52	53	54

Whether a load is placed on more than one wagon	Any other defect in vehicle which may have contributed to or caused the derailment	Details of broken parts giving location w.r.t. point of mount and drop	List of damages to the wagon due to accident	Other observations*
55	56	57	58	59

Note: Measurement of Items 3, 4 & 5 of opening note, items 42, 43, 44, 46, 47, 49, 50, 56 & 59 shall be done as per site conditions.

To be jointly signed by		
SSE/SE (C&W)	Supervisor (Traffic)	SSE/SE (P.Way)

\*\*\*

**Section “D”  
Checklist – LOCO**

**DURING FOOTPLATE**

S. No.	Items to be checked	Observations made
1	Rest availed by crew before signing “on” as per eligibility.	
2	Whether crew in sober condition and whether they are in the list of prone alcoholic.	
3	Whether the LP/ALP are ensuring that proper authorities are issued by SM before starting their train during normal and abnormal conditions	
4	Endorsement by Mechanical staff where available or by the LP/GD on BPC after performing shunting operation about the air-continuity test is made?	
5	Referring the loco log book remarks after taking over charge of the train / loco	
6	Whether personal mobile and CUG is switched ‘off’ by the LP?	
7	Availability of VCD in the loco, its functioning & position of isolation switch.	

8	Functioning of AFL & knowledge of the crew on testing the same	
9	VHF communication between Guard & Loco crew, whether working or not?	
10	Availability of valid competency both G&SR and technical & PME certificates of LP and ALP	
11	Ensuring the validity of fire extinguishers in the loco by the crew	
12	Functioning of loco hand brake & ensuring the same by crew	
13	Functioning of loco parking brake (if provided)	
14	Whether caution order is legible and corrections, if any are signed and stamped?	
15	Habit of looking back frequently on curves to ensure safe running of train	
16	Whether the crew are ensuring the stoppage of passenger carrying train within the platform ends (duly ensuring fouling clearances); and in regard to freight trains and light engines the crew shall draw ahead upto the foot of the Starter Signal or not?	
17	Habit of exchanging 'all-right' signals with the crew of trains passing on adjacent line in block section and as well at stations.	
18	Whether any un-authorized person travelling in loco	

19	Habit of recording & repeating any un-usual noticed related to track or signals or any other unsafe condition en-route	
20	Alertness of crew and their performance: does the ALP get down from the cab to take round of the loco, examine its under-gear visually, and take corrective action required, if any, at stations where the train has its schedule stoppage.	
21	LP/ALP safety consciousness & knowledge of safety rules	
22	Any other irregularities noticed during run related with other departments (like Operating, S&T, Engineering and Commercial)	

\*\*\*\*

## Section “E” Accident cases

1. **Brief of the accident** (SPAD): On 01.10.2020 at GDR station of BZA division, Train No.00616 while approaching GDR station, Distant signal proceed, inner distant attention and home signal caution. LP, while approaching starter signal at curve, immediately after seeing danger aspect applied emergency brake A-9 and passed starter signal No.81 at danger at about 18.17 hrs and stopped after passing starter for a length of 47.10 metres.

**Cause of the Accident:** ignoring inner distant attention and home signal caution.

**Responsibility:**

**Primary:**

1. Sri. K.Suresh Kumar, LP/Mail/MAS/S.Rly.
  2. Sri. Lal Saheb Kumar Pandey, ALP/MAS/S.Rly.
2. **Brief of the accident** (Derailment): On 14.10.2020 at about 18.13 hrs between TSR-NDD stations of BZA division, train No.NDV/NMG(Load) with Engine No. 31130/WAG-9/LGD consisting of 27 BCACBM(L) + 1 BV, while on run between TSR –NDD stations and observed caution order SR 20 kmph at KM 377/7-1, Wagon No. OPVT-BCACBM-35261910478(4<sup>th</sup> from TE), leading trolley all wheels got derailed towards left side in the direction of train movement and train parted between 3<sup>rd</sup> and 4<sup>th</sup> from train engine and stopped between KM 377/3-1.

**Cause of the Accident:** combination of defects such as deviation in parameters of Rolling stock and Permanent way, which might have caused off loading of all wheels of leading trolley

**Responsibility:**

**Primary:** nil

**Secondary :**

- a. Engineering- Sri K. Satyanarayana –SSE/P.Way/BPP
- b. Mechanical – Jindal Rail Infrastructure Limited(JRIL)- for allowing te new wagon with increased CBC heights after manufacturing.

3. **Brief of the Accident** (Derailment): On 25.10.2020 at about 17.37 hrs. at washing line-I/KZJ of SC division, while pushing the LHB coaching empty rake consisting of 22 coaches for stabling at washing line-1 & 2 in two portions, rear coach No.SCLDSLRA 201840 hit the buffer stop of washing line -1 and derailed all wheels of rear trolley and front trolley one pair of wheels

**Cause of the accident:** Shunting Master who was in rear of the formation continuously instructing shunter and loco points man to back the formation through walkie talkie. At the time of rear coach approaching buffer stop, the walkie talkie communication failed between rear SHM and shunter/leading PM, resulted rear SLR(LHB) bumped dead and derailed..

**Responsibility:** Sri. K.Madhu, SHM/KZJ – for not taking action as per SR 5.13 & 5.14 and completely relayed on walkie talkie communication.

4. **Brief of the Accident** (SPAD): On 27.10.2020 at PDL station of GTL division, while approaching PDL station, LP of Train

No.VPU special with Loco No.11394/WDM3D/GTL observed Distant signal caution and Home danger. He passed Distant signal at 72kmph and passed home signal No. S-60 at ON position at 19.;21 hrs and stopped the train after passing a distance of around 41.5 meters beyond home signal.

**Cause of the accident:** LP failed to stop the train at Home signal which is at 'ON' and ALP also failed to apply emergency brake to stop the train before home signal.

**Responsibility:**

**Primary:**

1. Sri. C.ISAQ, LP/P/GTL
2. Sri. Ananda Kumar Naik/ALP/GTL

**Secondary:**

1. C.H.L.P.S. Kumar CLI/GTL
2. L. Mani, CLI/GTL

5. **Brief of the accident** (fire on train): On 03.11.2020 at about at MED yard of HYB division, empty stabled coach No.SC/05275/WGSCN/CBC on road no.5 (MMTS line No.1) caught fire. SM/MED came to know the incident at about 13.45 hrs. 10 Empty CBC coaches were stable on Spur Line No.1 in which rearmost coach caught fire. No obstruction to through traffic.

**Cause of the Accident:** miscreant activity.

**Responsibility:**

**Primary:** Nil

**Secondary:** NIL

**Blameworthy:**

1. JE/C&W/KCG for not being vigilant while ensuring proper locking of window and doors of coach.



2. IPF/MJF for his failure to provide round the clock security deployment at Medchal station.
3. On duty points man for not being vigilant while checking the stabled coaches.

6. **Brief of the accident** (Derailment): On 09.11.2020 at NED yard of NED division, Empty coaching rake containing 10 coaches on stable line no. 3, while performing shunting with Loco No.11255 WDM-3D, formation rolled down towards PAU end and GSLRD's rear trolley all four wheels got derailed duly up routing the dead end of stable line. No obstruction to through traffic

**Cause of the Accident:** Misjudgement by Pointsman in stopping the loco at appropriate place while carrying out shunting

**Responsibility:**

**Primary:** Sri. Devender Kumar, P.Man/NED

**Secondary:** nil

**Blameworthy:** Nil

**Matters brought to light:**

1. As per present SWOD, there is a provision of buffer stop towards PAU end but physically dead end has been provided. Having falling gradient of 1 in 260 towards PAU end, there is essentially need of buffer stop to prevent such rolling down cases. This incident could have been avoided if buffer stop would have been made available as per SWOD.
2. Additional precautions to be taken while stabling vehicles/load/train at a station with gradient steeper than 1 in 400 may have been prescribed under approved special instructions and mentioned in SWR of the station.

Special instruction for securing of vehicle at stable line 03 may be incorporated in the SWR.

3. There is no provision of lighting arrangement at stable line 03 and this line remains in dark during night. During night time performing shunting in darkness is very difficult.
  4. Out door Dy.SS has taken the entry for securing of formation is stable load register superficially. Number of chains , wedges and coaches whose hand brake applied or not written
7. **Brief of the accident:** (derailment) On 16.11.2020 at about 20.15 hrs, at NPL yard of SC division, T. No.W-60/ BOXNHL, while admitting on Goods R&D Line No. 5, 24th wagon(ECOR/22120932061) from TE front trolley 4 wheels derailed after passing Point No.20 on plain track and dragged the derailed wagon about 400 meters and uncoupled the formation between 23<sup>rd</sup> wagon and 24<sup>th</sup> wagons on R&D lines.
- Cause of the Accident:** Residual Gypsum of 5 tonnes on LH side of the wagon No. ECoR BOXN 22120932061 (loaded by WDSG Siding authorities) and variation in versines.
- Responsibility:**
- Primary:** WDSG siding Authority/WD i.e. M/S ACC/WD for failing to unload the entire consignment of Gypsum maerial during unloading.
- Secondary:** NIL
- Blameworthy:** In-charge PWI/NPL

\*\*\*

**Section "F"**  
**Test Your Knowledge**

1. Maximum digital that can be connected in Data Logger \_\_\_\_\_
2. Track circuit dead section shall not be more than \_\_\_\_\_
3. In 3 phase loco, if vigilance penalty brakes are applied BP pressure drops to \_\_\_\_\_ kg/cm<sup>2</sup>
4. In 3 phase loco on moving BL key from 'D' to 'OFF' position, \_\_\_\_\_brakes will apply automatically.
5. On arrival in charge of motor trolley will sign with time and date on authority and deliver to SM with an endorsement. Authority shall be pasted in the \_\_\_\_\_ by SM.
6. When running between block station with engine leading, the speed of material train shall not exceed \_\_\_\_\_.
7. At least \_\_\_\_\_length on either side of the turnout should have the same section of rail as the turnout
8. Type of bogie used in BLL wagon is \_\_\_\_\_
9. The type of brake system adopted in LHB coach is \_\_\_\_\_
10. Every Official holding a competency certificate for working Motor Trolley shall give a declaration before the end of \_\_\_\_\_ of each year that he is well conversant with the rules for working Motor Trolley

\*\*\*

## KEY

1. 4096
2. 1.8 mts
3. 2.5 to 3
4. Parking
5. Station Diary
6. Prescribed speed of the goods train with similar load.
7. one rail
8. LCCFZDC
9. Axle mounted disc brake system.
10. december

\*\*\*

**Section “G”**  
**Safety drives launched**

Month	Details	from	to	No. of days
Oct -20	To ensure sae train operations	07.10.20	21.10.20	15
	Safety at worksites adjacent to running lines and operating track machines	28.10.20	10.11.20	15
Dec - 20	Ensuring safe train operations	30.12.20	13.01.21	15
In addition to above safety drives following calendar safety drive was also conducted.				
Oct -20	Exchange of ‘all-right’ signals	01.10.20	15.10.20	15
Nov- 20	S&T Disconnection and Reconnection Notice related	01.11.20	15.11.20	15
Dec - 20	Safety drive of the month –”Working on running lines” and “Safety at work sites.	01.12.20	15.12.20	15

\*\*\*

## Section “H” Accident Statistics

- In the third quarter of this financial year 2020-21, there was no consequential train accident and 16 other than consequential train accidents on this Railway when compared to 3 and 16 respectively in the previous financial year for the same period i.e. October to December. Every field Official shall take all preventive measures to sustain this performance
- Number of indicative accidents has sustained to zero when compared to 0 in the 2020-21 second quarter.
- The number of Yard Accidents has decreased from 10 during second quarter of 2020-21 to 2 during third quarter of 2020-21.
- For the month of October, there was no consequential train accident, one other train accident and one yard accident.
- For the month of November, there was no consequential train accident, one other than consequential train accident and two yard accidents.
- For the month of December, there was one consequential train accident and one other train accident.
- In regard to the safety performance of Divisions, accidents / unusual incidences in SC-2, BZA – 1, GTL – Nil, HYB – 1, NED – 1, GNT – 1.

\*\*\*