

## NORTH WESTERN RAILWAY

Headquarters Office  
Jaipur  
Date:29.06.2022

NO.W/432/0/CE

**Sr. DEN/Co.**  
All, BKN, JP, & JU

**Sub:** Maximum value of Cant on routes with sectional speed more than 100 kmph for nominated rolling stock.

**Ref:** i IRPWM- 2020 (ACS No. 8 datd 20.6.2022) para 404 (2)  
ii. PCE/NWR NO.W/432/0/CE Date:29.6.2022

Please find enclosed herewith a copy of above referred PCE Circular no. 138 for information and necessary action Please.

DA: AS above

*la*  
*29/06/2022*  
Dy CE/Track

**Copy to:**

CAO/NWR

CPD/SD, CPD/BW, CTE, CBE, CTE/TMC, CE/P&D, CE/G, CE/TP, CE/RSW, CE/Works,

CE/Br., CE/SD

Principal, ZRTI/UDZ



## NORTH WESTERN RAILWAY

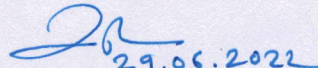
## CE Circular No. 138

- Sub:** Maximum value of Cant deficiency on routes with sectional speed more than 100 kmph for nominated rolling stock.
- Ref:** i. IRPWM-2020 (ACS No. 8 dated 20.06.2022) Para 404 (2) (a)  
ii. RDSO letter no. CT/DHS/3/Coaches dated 31.01.2022 addressed to CTE/NWR (Copy Enclosed)

Parameters	Limiting Value of Cant deficiency		
Maximum value of Cant deficiency on routes with sectional speed more than 100 kmph for nominated rolling stock.	100 mm for nominated rolling stock tabulated below as per RDSO letter under reference (ii)		
	SN	Name of Rolling stock	Transportation Code
	1	LHB AC Generator Van	LWLRRM
	2	LHB AC EOG Chair car	LWSCZAC
	3	LHB AC 2- tier coach	LWACCW
	4	AC First Class	LWFAC
	5	AC First cum AC-2 Tier	LWFCWAC
	6	AC Hot Buffet Car	LWCBAC
	7	Non AC Three Tier Sleeper coaches	LWSCN
	8	BG EOG Non AC Chair Car LHB coach	LWSCZ
	9	BG EOG Non AC GS LHB coach	LS5
	10	BG LHB Non AC EOG Second class Chair Car	LWSCZA
	11	BG EOG LHB Second Class Non AC Unreserved coach with vestibules	LWS
	12	BG EOG LHB Second class Cum Luggage & Brake Van	LSLRD
	13	Power car with underslung DG Set having compartment for luggage, lnd class unreserved passengers & disabled passenger)	LDLRA
	14	LHB Non AC EOG/HOG compliant Brake, Luggage cum Generator Van coach (with on-board 1x500 Kva DA set) with compartment for Divyangjan passengers	LWLRRMD
	15	Three Tier Sleeper coaches	LWSCNA
	16	LHB SLR Coach fitted with Underslung DG Set	LWLRRMU
	17	LHB High-capacity parcel van	LVPH
	18	LHB AC Vista dome coach	LWCTZAC
	19	LHB AC 3- tier Economy Coach	LWACCNE
	20	LHB Non AC EOG GS Coach	LS-5A
	21	LHB 3- tier sleeper Non AC Coach	LWSCNAA
	22	LHB EOG Non -AC Chair car	LWSCZAA
	23	LHB Second class cum luggage and brake van with compartment for divyangjan passenger	LSLRDAA
Note:			
1. Maximum cant on curved track shall as per IRPWM-2020 Para 404 and the length of Transition Curve shall be as per IRPWM-2020 Para 405.			
2. To raise the speed on curve, separate proposal for each curve with detailed calculation to be submitted to Headquarter for approval of CTE.			

This has the approval of PCE/NWR.

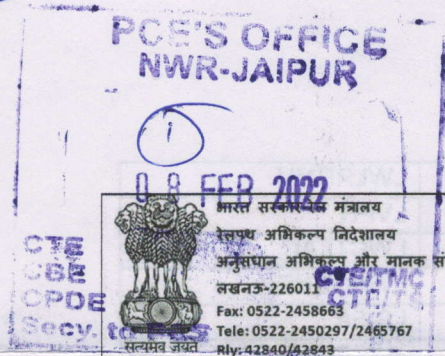
(No. W/432/0/CE Date: 29.06.2022)

  
29.06.2022  
(Anand Bhatia)

Chief Track Engineer/NWR



935266/2022/O/o AEN/TRACK/NWR/ENGG/HQ (COCH)/2/2020-O/o ED/TRACK-1/RDSO



Government of India-Ministry of Railways  
Track Design Directorate  
Research Designs & Standards Organization  
Lucknow-226011  
Email: edtrack1rdso@gmail.com  
dtd4rdso@gmail.com



NO. CT/DHS/3/COACHES

Dated: 31.01.2022

Chief Track Engineer,  
North Western Railway  
Headquarter office  
Jaipur-302017

**Sub:** Maximum speed on curves with cant deficiency of 100mm for different LHB coaches.

**Ref:** (i) NWR letter no. HQ/0/Engg/Track/47/2009 dated 20.11.2020, 11.01.2021 & 26.03.2021

(ii) NWR letter no. HQ/0/Engg/Track/47/2020 dated 28.09.2020.

North Western Railway vide letter referred above has requested to furnished the details of LHB Coaches for which cant deficiency of 100mm can be considered for increase the speed of group 'B' routes. Accordingly Carriage Directorate has been approached and Carriage has furnished the details of LHB coaches for which 100mm cant deficiency can be considered in reference to para 404 of IRPWM, June 2020 and listed below:

S.N.	Name of Rolling stock	Transportation Code
1	LHB AC Generator Van	LWLRRM
2	LHB AC EOG Chair car	LWSCZAC
3	LHB AC 2- tier coach	LWACCW
4	AC First Class	LWFAC
5	AC First cum AC-2 Tier	LWFCWAC
6	AC Hot Buffet Car	LWCBAC
7	Non AC Three Tier Sleeper coaches	LWSCN
8	BG EOG Non AC Chair Car LHB coach	LWSCZ
9	BG EOG Non AC GS LHB coach	LS5
10	BG LHB Non AC EOG Second class Chair Car	LWSCZA
11	BG EOG LHB Second Class Non AC Unreserved coach with vestibules	LWS
12	BG EOG LHB Second class Cum Luggage & Brake Van	LSLRD
13	Power car with underslung DG Set having compartment for luggage, IInd class unreserved passengers & disabled passenger)	LDSLRA
14	LHB Non AC EOG/ HOG compliant Brake, Luggage cum Generator Van coach (with on-board 1x500 Kva DA set) with compartment for Divyangjan passengers	LWLRRMD
15	Three Tier Sleeper coaches	LWSCNA



16	LHB SLR Coach fitted with Underslung DG Set	LWLRRMU
17	LHB High-capacity parcel van	LVPH
18	LHB AC Vista dome coach	LWCTZAC
19	LHB AC 3- tier Economy coach	LWACCNE
20	LHB Non AC EOG GS coach	LS-5A
21	LHB 3- tier sleeper Non AC coach	LWSCNAA
22	LHB EOG Non -AC Chair car	LWSCZAA
23	LHB Second class cum luggage and brake van with compartment for Divyangjan passenger	LSLRDAA

Enclosure: Nil

SANJAY  
KUMAR  
SRIVASTAVA

Digitally signed by  
SANJAY KUMAR  
SRIVASTAVA  
Date: 2022.01.31 14:57:10  
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(Sanjay Kumar Srivastava)  
Executive Director Standard/Track-I  
For Director General/RDSO

Copy to :Executive Director/Civil Engg) Railway Board for information please

S.N.	Name of Rolling stock	Transportation Code
1	LHB AC Generator Van	LWLRRMU
2	LHB AC EOG Chair car	LWCTZAC
3	LHB AC 3- tier coach	LWACCNE
4	AC First Class	LWFAO
5	AC First cum AC-2 tier	LWFCWAC
6	AC High Bulk Car	LWCBAC
7	Non AC Three tier sleeper coaches	LWSCN
8	BG EOG Non AC Chair car LHB coach	LWSCZ
9	BG EOG Non AC GS LHB coach	LS-5A
10	BG LHB Non AC EOG Second class Chair car	LWSCZAA
11	BG EOG LHB Second class Non AC Unreserved	LWSCZAA
12	BG EOG LHB Second class Cum Luggage & Brake Van	LSLRDAA
13	Power car with Underslung DG Set having compartment for luggage and class unreserved passengers & disabled passengers	LSLRDAA
14	Cum Generator Van coach (with on-board 1500 kW DA set) with compartment for Divyangjan passenger	LWSCNAA
15	Three Tier Sleeper coaches	LWSCNAA



भारत सरकार (GOVERNMENT OF INDIA)  
रेल मंत्रालय (MINISTRY OF RAILWAYS)  
रेलवे बोर्ड (RAILWAY BOARD)

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EF No. 2022/CE-II/CS/IRPWM2020

New Delhi, dated 20.06.2022

✓ **The General Managers (Engg.)**- CR, ER, ECR, ECoR, NR, NCR, NER, NFR, NWR, SR, SCR, SER, SECR, SWR, WR, WCR and Metro Railway/Kolkata.

**The General Manager (Const.), N.F. Railway, Guwahati.**

**The General Manager/CORE/Allahabad.**

Principal Financial Advisor, All Indian Railways

The CAO/Const. All Indian Railways.

The General Managers (Engg.) - ICF/Chennai, RCF/Kapurthla, DLW/Varanasi, CLW/Chittranjan, Rail Wheel Factory /Yelahanka, Bangalore & DMW/Patiala.

The Director General (Track), RDSO/Alambagh, Lucknow.

Chief Commissioner of Railway Safety, Lucknow.

Managing Director, IRCON, New Delhi.

Managing Director, RITES Bhawan, 1, Leisure Valley Rd, Sector 29, Gurugram, Haryana

Managing Director, DMRC, Metro Bhawan, Barakhamba lane, New Delhi.

Managing Director, CONCOR, New Delhi.

Managing Director, RVNL, August Kranti Bhawan, Bhikaji Cama Place, New Delhi.

Managing Director, DFCCIL, Pragati Maidan, Metro Station, New Delhi.

Managing Director, PIPAVAV Railway Corp. Ltd., 14th Floor, B-Wing, Statesman House 148, Barakhamba Road, Canaught Place New Delhi Central Delhi

Managing Director, MRVC, Church Gate station Building 2nd Floor, Mumbai - 400020.

Managing Director, RLDA, Unit No.702-B, 7<sup>th</sup> Floor, Konnectus Tower-2, DMRC Building, Ajmeri Gate Deelhi 110002

Managing Director, Konkan Railway Corporation Ltd, Belapur Bhawan, Sector-11, CBD Belapur. Mumbai. Pin - 400614.

Director General, IRICEN, Pune.

Director General, IRIEN, Nasik.

Director, IRISSET, Secunderabad.

Director, IRIMEE, Jamalpur.

Director General, IRITM, Vill. Kanausi, Hardoi, Manik Nagar, Lucknow.

Director General, NAIR, Vadodara.

Genl. Secretaries, AIRF, NFIR, IRPOF, FROA, DAI (Railways) Rail Bhawan, New Delhi.

**Sub: Correction Slip No. 8 to the Indian Railways Permanent Way Manual 2020.**

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Ministry of Railways (Railway Board) has decided that correction/addition as indicated in the enclosed Correction Slip No.8 dated 20.06.2022, to relevant para of IRPWM-2020 be made.

Receipt of this letter may please be acknowledged.

XEN/TM  
Dy CE/TO & TP

le

(Pradeep Nagar)

Director Civil Engg.(P)

Railway Board

CTE



**INDIAN RAILWAYS PERMANENT WAY MANUAL 2020**  
**ADDENDUM AND CORRIGENDUM SLIP NO. 8 DATED 20.06.2022**

Para 404(1)(d), 405(3) and 425 of Indian Railway Permanent Way Manual 2020 shall be replaced with the following:

**Para 404(1) (d)**

Maximum Design Cant on curved track shall be as under:

- (i) Broad Gauge –Group 'A', 'B' and 'C' routes- 165 mm

Note–Maximum design cant of 185 mm may be assumed for the purpose of locating all permanent structures etc., by the side of the curves on new constructions and doubling on group 'A' routes having potential for increasing the speed in future. The transition length should also be provided on the basis of 185 mm cant for the purpose of planning and layout of the curve.

- (ii) Broad gauge- Group 'D' route- 140 mm


**Para 405(3)**

In cases where ground conditions do not permit provision of the desirable transition length in accordance with the above, the length may be reduced to a minimum of  $\frac{2}{3}$  of the desirable length as worked out on the basis of formula (a) and (b) above or  $\frac{1}{2}$  of the desirable length as worked out on the basis of (c) above whichever is greater with approval of Chief Track Engineer. This is based on the assumption that a rate of change of cant/cant deficiency will not exceed 55 mm per second and the maximum cant gradient will be limited to 2.8 mm per metre or 1 in 360.

**Para 425**

The wear of rails of curves having radius of 600 m or less shall be recorded during scheduled curve inspection by SSE/P.Way(Incharge) and JE/SSE/Pway(Sectional) as stipulated in Table-1B of Para 106 and 109. The lateral wear, vertical wear and total loss of section should be recorded and proper record of measurements maintained.

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20.06.22

EF No. 2022/CE-II/CS/IRPWM2020

New Delhi, dated 20.06.2022

Copy to:-

Sr. PPS/PS to CRB &amp; CEO, MF, MI, M(T&amp;RS), M(O&amp;BD), Secretary.

AM(CE), AM(Works), AM(Budget), AM(Traction), AM(Fin.), AM(Sig.), AM(Plg.), AM(Mech.Engg.), AM(PU.), AM(Tele.), AM(Traffic), AM(M&amp;BD), AM(T&amp;C), AM(Comml.).

PED(Bridge), PED(Vigilance), PED(Safety), PED(Staff), PEDCE(P), PEDTT(M), EDTK(M&amp;MC), EDCE(G), EDCE(B&amp;S), ED(L&amp;A), ED /SD &amp; Transf., ED(Works), EDV(E), ED(Project Monitoring), ED(Safety), EDF(X)I, EDF(X)II, DTK(MC), DTK(M), DTK(P&amp;P), DCE(B&amp;S), Dir(Works)-I, Dir(Project Monitoring), DVE-I &amp; DVE-II,

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