

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)**

No. 2004/CE-II/CS/1

New Delhi, dt. 01 .06.2004.

Principal Chief Engineers/Chief Engineers

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 CAO/Const. All Indian Railways.
The CAO/Const., Metro Railway, Mumbai & Chennai.**

**Managing Director, Konkan Railway Corporation Ltd, Rail Bhawan, New Delhi.
Managing Director, IRCON, New Delhi.
Managing Director, RITES, New Delhi.
Managing Director, DMRC, N.B.C.C. Building, Pragati Vihar, New Delhi.
Managing Director, CONCOR, New Delhi.**

**The Chief Project Officer, DMRC, Pragati Vihar, New Delhi.
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Director, IRIEEN, Nasik.
Director, IRISSET, Secunderabad.
Director, IRIMEE, Jamalpur.
Director, IRITM, Vill. Kanausi, Hardoi, Manik Nagar, Lucknow.
Director General, Railway Staff College, Vadodara.**

**FA & CAO, All Indian Railways.
The Director General (Track), RDSO/Alambagh, Lucknow.
Chief Commissioner of Railway Safety, Lucknow.**

**Genl. Secy., AIRF, Rail Bhavan.
Genl. Secy., NFIR, Rail Bhavan.
Genl. Secy., IRPOF, Rail Bhavan.
Genl. Secy., FROA, Rail Bhavan.
Genl. Secy., AIRPFA, Rail Bhavan.
Genl. Secy., DAI (Railways) Rail Bhawan, New Delhi.**

*Sub: Advance Correction Slip No.94 to the Indian Railways Permanent Way Manual -1986
para-410.*

Ministry of Railways (Railway Board) have decided that correction/addition as indicated in the enclosed Advance Correction Slip No. 94 dated 01.06.2004, to relevant para of the IRPWM, be made.

Receipt of this letter may please be acknowledged.

**(H.L. SUTHAR)
Director Civil Engg.(P),
Railway Board.**

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New Delhi, dt. 01.06.2004.

Copy to : CRB, ME, ML, MS, MM, MT, FC, Secretary.

AM(CE), AM(W), AM(Budget), AM(Elect.), AM(Fin.), AM(Sig.), AM(Plg.), AM(MS), AM(Mech.), AM(PU.), AM(Tele.), AM(Traffic), Adv.(Vig.), Ad.(L&A).

EDF(X)-II, ED(Safety), EDCE(P), ED(Works), EDV(E), ED(Proj.), ED(DMRC), EDTK(M), EDTK(MC), EDTK(P), EDCE(G), EDCE(B&S), ED/L&A.

OSD(ME), DTK(MC), DTK(M), Dir.(Works) I & II, DLM, DCE(B&S), DVE-I & DVE-II, IPWE(I).

INDIAN RAILWAYS PERMANENT WAY MANUAL 1986 - (EDITION)

ADVANCE CORRECTION SLIP NO. 94 DATED 01.06.04

The existing para 410 (3) and 410 (4) of Indian Railways Permanent Way Manual may be modified to read as under :-

410(3) *Speed over interlocked turnouts* - Speed in excess of 15 kmph may be permitted for straights of interlocked turnouts only under approved special instructions in terms of GR 4.10.

In the case of 1 in 8.5, 1 in 12 and flatter turnouts provided with curved switches, higher speeds as permitted under approved special instructions may be allowed on the turnout side, provided the turn-in curve is of a standard suitable for such higher speeds. While permitting speed beyond 15 kmph, provisions of Para 410 (4) may be kept in view.

The permissible speed on turnouts taking off on the inside of the curve should be determined by taking into consideration the resultant radius of lead curve which will be sharper than the lead curve for turn outs taking off from the straight. 1 in 8.5 turnouts should not be laid on inside of curves.

410(4) *Upgradation of speeds on Turnouts and Loops to 30 kmph*

(a) **Length of Section** - Upgradation of speeds on turnout should cover a number of contiguous stations at a time so as to derive a perceptible advantage of the higher speed in train operation. The works described below, should cover all the running loops on the stretch of line taken up.

(i) **Turnouts** – Speed, in excess of 15 kmph, should be permitted on turnouts laid with ST or PRC sleepers only. All turnouts on the running loops shall be laid with curved switches, with minimum rail section being 52 Kg. All rail joints on these turnouts should also be welded to the extent possible.

For different type of curved switches permissible speed are as under :-

<u>S.No.</u>	<u>Type of Turnout (BG)</u>	<u>Permissible speed</u>
1.	1 in 8.5 curved switch	15 kmph
2.	1 in 8.5 symmetrical split with curved switches	30 kmph
3.	1 in 12 curved switch	30 kmph

(ii) **Track on running loops** - Speed in excess of 15 kmph, should not be permitted on running loops laid with wooden sleepers. The minimum track structure on the running loops should be 90R rails laid as Short Welded Panels, M+4 density on PRC, ST, CST-9 sleepers and 150 mm ballast cushion. Out of 150 mm total cushion, clean cushion of 75 mm at least should be available. Proper drainage of the area should also be ensured.

(iii) Turn-in curves - Speed in excess of 15 kmph, should not be permitted on Turn-in curves laid with wooden sleepers. Turn-in curves should be laid with the same rail section as on the turn-out with PRC, ST or CST-9 sleepers with sleeper spacing being 65 cm centre to center (maximum).

Turn-in curve should conform to Para 410 (2) of IRPWM and especially so in respect of curvature of the lead curve.

Extra shoulder ballast of 150 mm should be provided on outside of the turn-in curve.

The frequency of inspection of turn-in curves should be same as that for main line turn-outs.

(b) The following should be ensured, if CST-9 sleepers are used in running loops or turn in curves :-

- (i) There is no cracks or fracture at rail seat in two consecutive sleepers.
- (ii) There is no excessive wear of lug and rail seat.
- (iii) All the fittings keys, cotters and tie bars are fitted properly. Rail is held firmly with sleepers.
- (iv) Tie bars should not be broken or damaged by falling brake gear, wagon parts etc. and they should not have excessive corrosion or elongated holes. The corrosion of tie-bars inside the CST-9 plate should be especially checked as this results in their removal and adjustment becoming difficult.

(c) The following should be ensured, if ST sleepers are used in Turnouts, Turn-in curves or running loops :-

- (i) There is no crack or fracture at rail seat in two consecutive sleepers.
- (ii) There is no excessive wear of lug, MLJ and rail seat
- (iii) All the fittings are effective and rail is held with sleepers properly.
- (iv) The sleepers and fittings do not have excessive corrosion, elongated holes etc.
