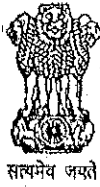


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भारत सरकार - रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ - 226 011
Government of India-Ministry of Railways
Research Designs & Standards Organisation
Lucknow - 226 011

AN ISO 9001
CERTIFIED
ORGANISATION

ANURUDH JAIN
EXECUTIVE DIRECTOR/TRACK

No. CT/PTX/TO Speed

Dated: 12.10.2006

Dear Shri Chopra,

Sub: Increase of speed on turnouts.
Ref: My D.O. letter of even no. dated 20.02.2006.

During the last GCM, ME had desired that speed on the turnouts should be raised to 50Kmph in stages of 30 & 45Kmph. He also desired that the matter shall be examined by a multi disciplinary team at RDSO. In this regard, Railway Board had issued letter No. 86/W3/SG/H/1 dated 3.2.1988 & 28.3.1989 advising Zonal Railways to increase the speed on turnouts by fulfilling certain conditions from Track as well as Signal point of view. As such instructions for permitting speeds upto 50Kmph were already existing. As informed vide my above D.O. letter, speed on turnouts has been raised to 30Kmph on almost 55% of Group 'A' route of Indian Railways network.

Matter has been examined afresh with Signal and Traffic Directorate of RDSO and a joint note has been recorded. Copy of the same is enclosed. It is now proposed that consolidated instructions be issued by Board to Zonal Railways to clarify the matter further. I am enclosing a draft of the proposed letter which may be issued to Zonal Railways from Railway Board.

You are requested to consider the above and issue further instructions.

With Regards,

Yours sincerely,

(ANURUDH JAIN)

DA: As above

Shri Rakesh Chopra,
Additional Member (CE),
Railway Board, Rail Bhawan,
New Delhi-110001

DCE/P 1805
24.11.06

Per 1805
23/11

File upon file
23/11

30/11

84-DSP
1/12

774
4/12

12
24/11

2/8

(A)

Sub: Increase of speed on Turnouts.

A number of letters have been issued by Railway Board/RDSO on the subject of increasing speed on turnouts. This issue comes up for discussion, frequently, in various meetings. It is considered necessary that consolidated guidelines are issued to Zonal Railways to clarify the matter. Present status of various issues involved is as under:

1. Speed potential of turnouts is as under:

S.No	Type of turnout (BG)	Permissible speed
1	1:8.5 symmetrical split with curved switches 52/60Kg including TWS on PSC sleepers	40 Kmph
2	1:12 curved switch 52/60Kg including TWS on PSC sleepers	50 Kmph
3	1:16 curved switch 60Kg on PSC sleepers	65 Kmph
4	1:20 curved switch 60Kg on PSC sleepers	85 Kmph

2. Speed of 30Kmph on turnouts has been permitted vide Board's letter No. 86/W3/SG/H/1 dated 28.3.89. Following conditions are required to be satisfied for implementation of 30Kmph.

- (a) Higher speed turnouts are provided on a reasonably long section in a continuous stretch.
- (b) On such sections higher speed turnouts are provided on all running lines.
- (c) Turn in curves and running loops on which higher speed is permitted, are suitably strengthened.
- (d) Arrangements for detection of facing points (including siding points) available in the loop line, if any.

Items (a) to (c) are as provided in Board's letter dated 28.3.89 and (d) is as per provisions in the Signal Engineering Manual.

3. Speed can be raised up to 50Kmph on 1 in 12 curved switches and 40Kmph on 1:8.5 symmetrical split with curved switches 52/60Kg on PSC sleepers. As a substantial number of 1 in 8.5 symmetrical split turnouts are existing on running lines, it may not be feasible to increase the speed beyond 40 kmph without incurring heavy expenditure on replacement of these turnouts with 1 in 12 turnouts. In addition to

cost, such replacement may not be feasible in some yards due to additional length required for 1 in 12 layouts. Speeds up to 40Kmph can be achieved if the following additional provisions are fulfilled:

- (i) Turnouts should be on PSC sleepers.
- (ii) Aspects of Home Signal to be modified suitably so as to enable the driver to know whether he is passing through the loop line/main line or has to stop on the same so that he can control the train speed accordingly. This can be achieved by arranging the signalling as shown in Annexure-I. This signalling arrangement was finalised by Board in connection with provision of high speed turnouts, for speeds upto 50Kmph, and circulated vide Railway Board's letter No. 86/W3/SG/H/1 dated 03.02.1988. The two sketches (Annexure 1-A & 1-B) are for single distant and double distant territory. Following changes have been made in the original sketches circulated vide Board's letter of 03.02.1988:
 - (a) The title of sketches have been modified.
 - (b) The aspects of only those signals have been specified which are coming in the route of the train.
 - (c) In case of single distant when the train is to stop on main line, distant should be green instead of double yellow as per present practice.
- (iii) Another aspect is improved visibility of signals, particularly the starter signal of loops so that drivers running at higher speeds of 40Kmph are able to see the starter signal aspect after entering the loop, well in time to stop the train. Use of LED signals will provide enhanced visibility. For ready reference, EBD for various combinations of rolling stock and speed is enclosed as Annexure-II.


4. Detailed instructions stipulating the track structure for permitting 30Kmph speed on turnouts have been incorporated in para 410 of IRPWM vide correction slip no. 94. As per the correction slip, permissible speed on 1 in 12 curved switches as well as on 1 in 8.5 curved switches laid in a symmetrical split is 30Kmph provided both these are laid on PSC/ST sleepers. Considering the deteriorating condition of wooden sleepers in turnouts, these have been kept outside, the purview for increase

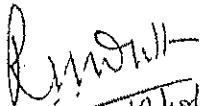
In speed. Based on the experience with 40Kmph, provisions of IRPWM can be considered for suitable amendment. (22)


5. In case it is considered necessary to further increase the speed on turnouts in a section to 50Kmph, it can be done provided all the 1 in 8.5 turnouts on running lines of the proposed section have been replaced with such turnouts which permit a speed of 50Kmph or higher.

6. Para 4.10 of General Rules, 1976 specifies that speed over turnout and crossovers shall not exceed 15Kmph, unless otherwise prescribed by approved special instruction, which may permit a higher speed. Suitable provision for this will have to be made in Station Working Rules with approved special instructions to permit such higher speeds.

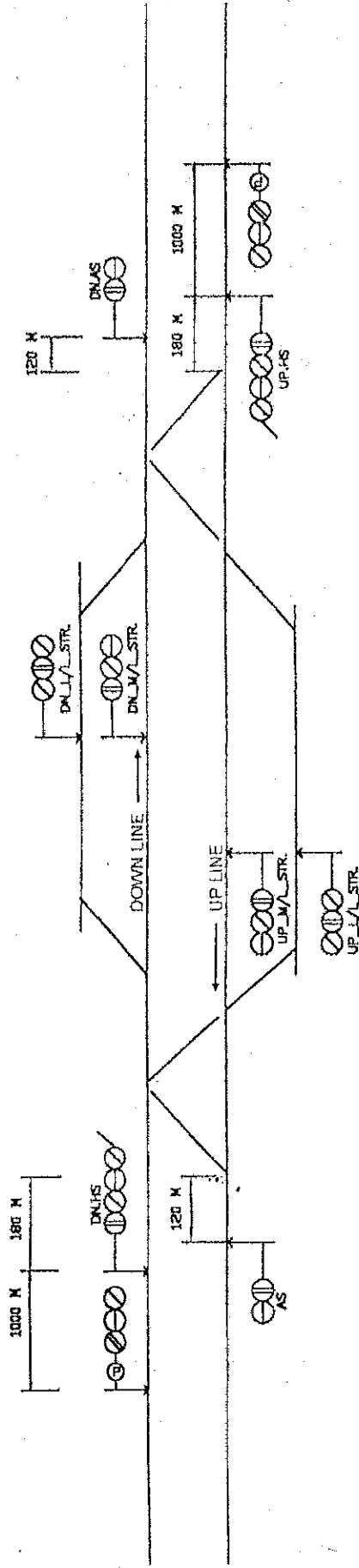
7. Based on the above, it is recommended that Railway Board be approached to issue instructions for permitting higher speeds on turnouts, as enclosed in Annexure-III.


12.10.06
(Anirudh Jain)
EDST


12/10/06
(R.K. Dutt)
Sr.ED/Traffic


12.10.06
(G.D. Bhatia)
Sr.ED/Signal

ASPECT CONTROL CHART AT STATIONS WITH 4 ASPECT HOME & SINGLE DISTANT SIGNALS TO HAVE >30 KMPH SPEED ON TURNOUTS



SEQUENCE CHART

DISTANT	HOME	MOVEMENT	LOOP STARTER	MAIN STARTER	ADV STARTER
Y	R	STOP AT HOME SIGNAL	---	---	---
YY	Y	STOP ON LOOP LINE	R	---	---
G	Y	STOP ON MAIN LINE	---	R	R
YY	YY	RUN THROUGH LOOP LINE	YY	---	G
G	G	RUN THROUGH MAIN LINE	---	G	G

SEPTEMBER 2006

(222)

