CIVIL ENGG DEPARTMENT

COMPENDIUM OF INSTRUCTIONS

(April 2015 - March 2016)

Issued by

Railway Board

April 2016

F.No. 2014/CE-II/Genl./Instructions
L. No. 2014/CE-II/Genl./Instructions/Compendium/15-16

Subject Matters Pertaining to CE-I Directorate (EDCE/G)

SN	Letter No.	Date	Subject	Page No.
1	2014/CE-I/CT/O/21	20.07.2015	Executing railway works through MGNREGA.	1-2
2	2015/CE-I/IRUSS(W&M)/1	29.07.2015	Addendum & Corrigendum Slip (ACS) No. 01 to Indian Railways Unified Standard Specifications (Works & Materials), 2010 – Volume-I for Thermo Mechanically Treated (TMT) Bars.	3-4
3	2015/CE-I/CT/1/1/TS	24.08.2015	Checking of Tender Schedule by the Technical Staff	5-6
4	2014/CE-I/WP/5	03.09.2015	Development and Implementation of e-procurement system (IREPS) in works contracts on Indian Railways – The prerequisites.	7
5	2015/CE-I/IRUSS(W&M)/1	29.09.2015	Addendum & Corrigendum Slip (ACS) No. 02 to Indian Railways Unified Standard Specifications (Works & Materials), 2010 – Volume-II for Polyethylene Water Storage Tank.	8-9
6	2014/CE-I/WP/5	23.12.2015	Newspaper Advertisement for Implementation of e-procurement system (IREPS) in Works Contracts on Indian Railways.	10-11
7	2014/CE-I/WPS	31.12.2015	Training for development and implementation of IREPS in Works system of Indian Railways.	12
8	2014/CE-I/WP/5	08.01.2016	Development and Implementation of e-tendering in works contracts on Indian Railways through web application – IREPS (Works) Module.	13-14
9	2014/CE-I/WP/5	27.01.2016	Development and implementation of IR's e-procurement system (IREPS) in Works Contracts on Indian Railways.	15-16
10	2014/CE-I/WP/5	05.02.2016	Implementation of e-tendering in Works Contracts on Indian Railways through IR's E-Procurement System (IREPS).	17-18
Subject Matters Pertaining to CEDO				
1	2015/CEDO/SD/IRSOD/O/1	15.01.2016	Date of applicability of Addendum & Corrigendum Slips (ACSs) to IRSOD(BG), 2004.	19
2	2007/CEDO/SD/O	26.02.2016	Condonation to infringing dimensions w.r.t. provisions of IRDOD	20-22

Subject Matters Pertaining to CE-II Directorate (EDCE/P)

SN	Letter No.	Date	Subject	Page No.
1.	2009/CE-II/TK/1 (Policy)	28.04.15	Rear window Inspections	23
2.	2006/CE-II/Safety/1	11.06.15	Monsoon Precautions	24
3.	2013/CE-II/CS/4	18.06.15	Advance Correction Slip No. 137 to the Indian Railways Permanent Way Manual.	25-28
4.	2015/CE-II/Accident/7	06.07.15	Availability of P way material on material train of ART	29
5.	2015/CE-II/Accident/1	28.07.15	Counseling of SEs/JEs(P.way and trackmen)	30
6.	2006/CE-II/Safety/1	05.08.15	Monsoon Precautions	31-32
7.	2011/CE-II/CS/3	25.08.15	Advance Correction Slip No. 138 to the Indian Railways Permanent Way Manual.	33-35
8.	2011/CE-II/PRA/1/17(CRS)	27.08.15	Train accidents due to infringement by road vehicles	36
9.	2015/CE-II/TK/Trackmen Report/Pt	14.09.15	Provision of warning/hooter system to prevent deaths of track maintainers while on duty	37
10.	2011/CE-II/Accident/Policy	21.09.15	Safety drive for inspections and maintenance of station yards	38
11.	2015/CE-II/Meeting/3	21.09.15	Meeting with Sr. Section Engineer/P.way (SSE/P.way)	39
12.	2015/CE-II/Accident/18	28.09.15	Safety drive for inspections and maintenance of station yards	40-47
13.	2006/CE-II/Safety/1	08.10.15	Winter precautions to prevent rail/weld failure-safety of track	48
14.	2015/CE-II/Geo-tech/1	08.10.15	Setting up Geo tech Engg. Lab in open line as well as in Construction Organisation of Zonal Railways	49
15.	2011/CE-II/Safety Equipment	08.10.15	Upkeep and maintenance of surveying instruments	50
16.	2015/CE-II/TK/Inspections	14.10.15	Last vehicle Inspections by P.way officials	51
17.	2014/TMS/AMS/1	16.10.15	Mapping of IR Asset and uploading on GIS portal	52-53
18.	2011/CE-II/Accident/Policy	18.12.15	Derailment of ballast trains/material wagons due to carelessness in loading/unloading on IR	54-56
19.	2015/CE-II/TK/14	30.12.15	Safety at Work Sites.	57
20.	2012/CE-II/TK/Rail Renewal	14.01.16	Rail Section for Track Renewals, Doublings, New Lines and Gauge conversion Projects	58-59
21.	2015/CE-II/TK/LWR	29.01.16	Destressing of LWR using tensors	60
22.	2015/CE-II/CRS/4	08.02.16	Survey of roads running parallel to track on top of cuttings, intermediates berms of cuttings, approaches of ROB in cuttings	61
23.	2015/CE-II/CS/1	08.02.16	Advance Correction Slip No. 139 to the Indian Railways Permanent Way Manual.	62-63
24.	2009/CE-II/Accident/Policy	09.02.16	Prevention of Derailment of container flat wagons	64
25.	2016/CE-II/TK/1	24.02.16	Intelligent field device for Continuous Rail temperature (CRT) measurement devices	65-72
26.	2014/CE-II/Genl/PNM	02.03.16	Equipments of Keyman (Para 169 of IRPWM	73-78
27.	2014/CE-II/Genl/DC/JCM	04.03.16	Provision of accommodation to trackman in accident relief trains	79
28.	2012/CE-II/TK/Trackman Report/pt	11.03.16	Trial of VHF based approaching Train warning System for Trackmen.	80-81

Subject Matters Pertaining to CE-III Directorate (EDCE/B&S)

SN	Letter No.	Date	Subject	Page No.
1	2014/CE-III/BR/Bridge Policy	21/04/2015	Span arrangement of railway Bridges	82
2	2012/CE-II/BR/Rly. Federation	29/04/2015	Provision of Man refuges on Girder Bridges	83
3	2013/CE-III/BR/IRBM	12/05/2015	Approval of General Arrangement Drawing (GAD) of Major Bridges on DFCCIL Alignment	84
4	2014/CE-III/BR/Bridge Policy	29/05/2015	Construction of Road Under Bridge (RUBs)	85
5	2014/CE-III/BR/Bridge Policy	25/06/2015	Availability of relieving girders in adequate numbers.	86
6	2015/CE-III/BR/Water Level Gauge	02/07/2015	Installations of water level Monitoring System at Railway Bridges	87-93
7	2014/CE-III/BR/Bridge Policy	31/08/2015	Use of High Strength Friction Grip (HSFG) Bolts on Indian Railways	94
8	2014/CE-III/BR/Bridge Policy	09/09/2015	Measurement of longitudinal movement of Bridge Bearings	95-97
9	2015/CE-III/BR/Water Level Gauge	05/11/2015	Installations of water level Monitoring System at Railway Bridges	98
10	2015/CE-III/BR/River Protection Works	16/11/2015	Status & Maintenance of Guide Bunds of Railway Bridges	99
11	2015/CE-III/BR/RDSO/Misc.	01/12/2015	Protection arrangements for RCC Box. Culverts & RUB/ LHS	100
12	2014/CE-III/BR/Bridge Policy	04/12/2015	Guidelines for repair rehabilitation/rebuilding of Bridges	101
13	2014/CE-III/BR/Bridge Policy	09/02/2016	Inspection and Maintenance of waterways of Bridges	102
14	2015/CE-III/BR/RDSO/Misc.	26/02/2016	Numerical Rating System for Railway Bridges	103
15	2015/CE-III/BR/RDSO/Misc.	01/03/2016	Guidelines for suitability of bridges for 25T loading	104
16	2015/CE-III/BR/25 Tonne Loading	10/03/2016	25T Axle Load Operation	105-106

Subject Matters Pertaining to CE-IV Directorate (EDCE/B&S-II)

SN	Letter No.	Date	Subject	Page No.
1.	2015/CE-IV/ROB/76	04.03.2015	Approval of GADs of ROBs/RUBs	107-108
2.	2014/CE-III/BR/Bridge Policy	29.05.2015	Construction of Road Under Bridge (RUBs)	109
3.	2015/CE-IV/ROB-RUB/Misc/49	02.06.2015	Regular meetings with State Govt and MORTH/NHAI for expeditious construction of ROBs/RUBs	110
4.	2012/CE-IV/DFC/RSW/1(LX-ROB)	23.06.2015	Construction of ROBs/RUBs on IR and DFC routes	111
5.	2015/CE-IV/ROB-RUB/Misc/49	25.06.2015	Bi-monthly meeting between Ministry of Railways and MORTH/NHAI	112
6.	2015/CE-IV/ROB/78	09.07.2015	Delay in approval of GADs of ROBs/RUBs submitted online by MORTH/NHAI	113
7.	2015/CE-IV/ROB/78	14.07.2015	Third meeting of Group of Infrastructure held on 09.06.2015 chaired by the Hon'ble Minister for Road Transport & Highways	114-115
8.	2015/CE-IV/ROB/78	15.07.2015	Minutes of meeting held by Adv(Bridge) with officials of NHAI on 14.07.2015	116-117
9.	2015/CE-IV/ROB/303 - PCE/WR	31.08.2015	Drainage at station are yard/ROBs constructed in Mumbai Area	118
10.	2015/CE-IV/ROB/250 (Estt. Design)	09.09.2015	Typical GAD of ROB-cum-LHS	119-122
11.	2015/CE-IV/Misc/86	10.09.2015	Review Meeting by ME	123
12.	2015/CE-IV/ROB/76	17.11.2015	Approval of GADs of ROBs/RUBs - Use of multiple spans depending upon the width of railway boundary	124
13.	2006/CE-IV/Misc/2(RUB) Pt.2	26.11.2015	Clarification on Provision of subways in lieu of LCs	125
14.	2012/CE-IV/Misc/54/Pt-III - PCE/SWR	04.12.2015	Construction of ROBs/RUBs on cost-sharing basis on KRCL route.	126
15.	2015/CE-IV/LX/289 (Automatic Banner Flag)	09.12.2015	Automatic Banner Flag on Non-Interlocked Manned Level Crossings	127
16.	2015/CE-IV/ROB/78(pt.)	10.02.2016	Approval of GADs for the construction of ROBs/RUBs on NH Corridor.	128
17.	2015/CE-IV/RUB/206	15.02.2016	Special Conditions for working of Road Cranes.	129
18.	2015/CE-IV/ROB-RUB/Misc/49	22.03.2016	Type of Foundation for ROBs being constructed by MORTH/NHAI.	130
19.	2015/CE-IV/ROB/78	30.03.2016	Approval of GADs for the construction of ROBs/RUBs on NH Corridor.	131
20.	2015/CE-IV/ROB/78	30.03.2016	Approval of GADs for the construction of ROBs/RUBs on NH Corridor.	132

Subject Matters Pertaining to Track-I Directorate (EDTK/P)

SN	Letter No.	Date	Subject	Page No.
1	No.198-W/e-Gov/TMS/IR-implement/Pt-II	15.04.2015	Implementation of Track Management System (TMS) in 40 Divisions of Indian Railways.	133-139
2	No. Track/21/2004/0902/7/Vol.II	22.04.2015	Tenders for outsourcing of USFD testing of rails.	140-141
3	No. Track/21/2007/0903/7	30.04.2015	USFD testing of rails by Sr. DENs.	142
4	No. Track/21/2009/0110/7	05.05.2015	AT Welding of rails in construction projects.	143
5	No. Track/21/2002/0905/7 Vol.-II	18.05.2015	Committee to Study provisions of defective welds.	144
6	No. Track/21/2002/0905/7 Vol.-II	22.05.2015	Phasing out of Analogue SRT/DRT Machines.	145
7	No. 2014/Track-I/5/22	30.06.2015	Joint Procedure Order for operation of EUR rakes.	146-151
8	No. Track/21/2002/0905/7 Vol.-II	14.07.2015	Phasing out of analogue SRT/DRT Machines.	152
9	No. Track/21/08/014/7/1 Specification	28.07.2015	Manufacturing of short length and asymmetrical rails by BSP / SAIL.	153-154
10	No. 2015/Track-I/5/12	12.10.2015	Levy of departmental charges @ 12.5% for supply of rails.	155
11	No. Track/21/2006/0500/7	14.10.2015	Points noted during ME's visit to DFCCIL reg use of PVC sheets.	156
12	No. Track/21/2004/0110/7/51154	20.10.2015	Independent Audit of Flash Butt welding sites.	157-158
13	No. 2011/Track-I/12/1	16.12.2015	Tender for Flash Butt Welding Plant.	159
14	No. 2011/Track-I/5(1)/8	22.12.2015	Planning of supply of rails from BSP/SAIL.	160-167
15	No. 2009/TMS/3/Rly./Meetings	21.01.2016	Railway Affecting works module in Track Management System (TMS) Application.	168-169
16	No. 2009/TMS/3/Rly./Meetings	02.02.2016	Landmark Railway Structures – Buildings & Bridges (IR-LS).	170-171
17	No. 2011/Track-I/5(1)/8	12.02.2016	Planning of welding of rails in Stationery Flash Butt Welding Plants and movement of long rails from BSP after commissioning of new rail rolling mill.	172
18	No. 2009/TMS/3/Rly./Meetings	24.02.2016	Augmentation of data regarding Level crossings in Track Management System (TMS) Application.	173-175
19	No. Track/21/2007/0110/AT Welding	03.03.2016	Extension of date reg. implementation of AT Welding with single shot crucible.	176-181
20	No. Track/21/2007/0110/AT Welding	03.03.2016	Issuance of Bar coded Identity cards to departmental welders of IR.	182

Subject Matters Pertaining to Track-II Directorate (EDTK/M)

SN	Letter No.	Date	Subject	Page No.
1	2011/Tk-II/22/11/4/Policy	27.04.2015	Sale of released serviceable surplus 52 kg PSC sleepers for use of private parties.	183
2	2012/Tk-II/22/7/3/Track fitting	25.05.2015	Revised PVC formula for ERC-Mk III and Mk V.	184-187
3	2004/TK-II/22/5/7	07.07.2015	IRICEN's Session No. 15301 – Seminar for CE/TP, held on 7th& 8th May, 2015 – Clarification regarding "Serviceability Criteria of CGRSP".	188
4	2012/Tk-II/22/7/3/Track fitting	23.07.2015	Revised PVC formula for ERC-Mk III and Mk V.	189-191
5	2014/Tk-II/22/7/1 (Policy)	16.11.2015	Applicability of Inspection Charges and General Charges on sleepers being issued to construction projects and private parties.	192
6	2015/Tk-II/22/11/4(Policy)	31.12.2015	System Improvement: Procurement of concrete sleepers by RITES/IRCON and other private parties.	193
7	2013/TK-II/22/7/4 (Gen Policy)	08.03.2016	New Policy on development and adoption of new products/ technologies for track/bridge related items.	194-217

Subject Matters Pertaining to Track-III Directorate (EDTK/MC)

SN	Letter No.	Date	Subject	Page No.
1	91/Track-III/TK/41 Vol.5	06.04.2015	Reporting of accidents involving Track Machines	218
2	2007/Track-III/TK/21 Vol.II	12.06.2015	Minutes of PCEs conference held in Railway Board on 22.04.2015	219-220
3	2015/Track-III/TK/Misc	09.07.2015	Innovation on Zonal Railways-May 2015	221-223
4	2007/Track-III/TK/10 Vol.II	20.07.2015	Maintenance of Logbook of Track machines.	224
5	2011/Track-III/TK/5	10.08.2015	Instructions on electricity operated final drive/work drive ZFGear Box.	225-236
6	2014/Track-III/TK/3	14.08.2015	Board's orders on Track Machines items on minutes of CE/TMC's seminar held at IRICEN Pune on 21st & 22nd August 2014.	237-245
7	2015/Track-III/TK/2	18.09.2015	Safe working of Track Machines.	246
8	2015/Track-III/TK/2	26.10.2015	Safety at worksite-Integrated blocks/Group working of Track Machines.	247-253
9	2014/Track-III/TK/5	02.11.2015	Minutes of meetings of Chief Engineers of Track Machines held on 06.10.2015 in Board.	254-260
10	2000/Track-III/TK/18Vol.II	24.11.2015	Squeezing time of tamping.	261-262
11	2014/Track-III/TK/3	24.11.2015	Machine wise "Masters" required for calibration of parameters.	263-268

Subject Matters Pertaining to L&A Directorate (ED/L&A)

SN	Letter No.	Date	Subject	Page No.
1	2015/LML-I/19/2	25/06/2015	Procedure for issue of 'No Objection Certificate' for construction/redevelopment of Government and private building on land adjoining railway boundary.	269-271
2	2014/LML-II/18/5	29.02.2016	Policy on licensing of railway land for commercial plots, etc.	272
3	2009/LMB-II/12/1 Vol. I	11/03/2016	Revision of rental ceilings for Railway Officers posted in Railway Zone and Board's office.	273-274

Subject Matters Pertaining to Works Planning Directorate

SN	Letter No.	Date	Subject	Page No.
1	2011/Proj/DMRC/30/7	23.09.2015	Guidelines for Noise & Vibrations for Metro Rail Transit Systems	275
2	2011/Proj/MOU/31/1 Vol.I	26.11.2015	Derailment Guard for Single Track Tunnels	276
3	2011/Proj/MOU/31/1 Vol.I	18.11.2015	Amendment to Annexure-C2 of the "Procedure for Safety Certification and Technical Clearance of Metro Systems	277-278
4	2011/Proj/9/2	12.02.2016	Guidelines for ballastless track washable aprons	279-286

IMPORTANT INSTRUCTIONS ISSUED DURING 2015 ISSUED BY RDSO

SN	Approved by Railway Board vide Letter No.	Date	Subject	Page No.
1	RS/G/108/Heavy Axle Load	19.10.2015	Guidelines for Design/Construction of Formation on Indian Railway Track (Review of blanket layer)	287-290
2	CT/USFD	09.07.2015	Training on Inspection of Ultrasonic testing equipments for official of Zonal Railways.	291

SN/16

भारत सरकार Government of India
रेल मंत्रालय Ministry of Railways
(रेलवे बोर्ड) (Railway Board)

(1)

No. 2014/CE-I/CT/O/21 New Delhi, dated 20th July, 2015

The Principal Chief Engineers,
All Indian Railways.

विषय: Executing railway works through MGNREGA.
संदर्भ: EDCE(G)/Railway Board's Letter No.2014/CE-I/CT/O/21, dated 27.08.14 & 12.09.14.

*****

1. List of railway works that could be taken up through MGNREGA administered by the State Government was circulated vide letter, dated 27.08.14 referred above. This includes:-

   (a) Construction & maintenance of approach roads for level crossings
   (b) Developing & cleaning silted water-ways, trenches & drains along track
   (c) Construction & maintenance of approach road to railway stations
   (d) Repairs of earthwork to the existing railway embankments/cuttings
   (e) Clearing vegetation growth
   (f) Activity of plantation at extreme boundary of railway land at such locations where land is available in plenty, not likely to restrict expansion of Railways and also not to infringe train operation due to tree falling, may also be added to the scope of identified works after examining the related modalities.

2. It was also indicated that MGNREGA Scheme has been successfully implemented in Warangal District of Andhra Pradesh, Udaipur District of Rajasthan, Madurai District of Tamil Nadu, Allahabad District of Uttar Pradesh and Malda District of West Bengal. It was also suggested that Railway Officials should visit and have a feel of these schemes and methodology for implementation.

3. During a recent review meeting, Hon'ble MR has pointed out that there is much scope for carrying out works in Railways by tapping the resources available with the MGNREGA Scheme.

4. PCEs should draw up a list of works (along with costs) which can be carried out through this scheme. Sr. DENs should actively interact with the concerned District Collectors/District Magistrates for getting the list

cleared by the local Revenue Authorities for effective execution of the same. The works will have to be supervised by the SSE/JE/Works.

5. PCEs are requested to send a list of such works with costs by 07.08.2015, so that a consolidated list can be put up to Board.

(S.S. Narayanan)
Additional Member (Civil Engineering)
Railway Board

भारत सरकार Government Of India
रेल मंत्रालय Ministry Of Railways
(रेलवे बोर्ड) (Railway Board)

(3)

No. 2015/CE-I/IRUSS (W&M)/1 **New Delhi, Dated 29th July 2015**

Addressed to :
As per list below.

Sub : Addendum & Corrigendum Slip (ACS) No. 01 to Indian Railways Unified Standard Specifications (Works & Materials), 2010 - Volume-I for Thermo Mechanically Treated (TMT) Bars.

Ref : Railway Board's letter no. 2007/CE-I/CT/8, dated 01.05.2012 and 2007 /CE-I/CT/8, dated 31.03.15.

In continuation to the approval of Board vide letters under reference, Ministry of Railways (Railway Board) have decided that Para 3 of Annexure 4.1, Chapter 4 of Indian Railways Unified Standard Specifications (Works & Materials), 2010 : Volume-I be amended as shown in the enclosed Addendum & Corrigendum Slip (ACS) No. 01.

This issue with the approval of Additional Member (Civil Engg.), Railway Board.

संलग्नक / उपरोक्तानुसार

29/07/15

(आलोक कुमार)
कार्यकारी निदेशक / सिविल इंजीनियरिंग(जी) / रेलवे बोर्ड
[Phone : 030-44803 (Rly.); 011-23383379 (MTNL); 09910487302 (CUG Mobile)]
e-mail address : edceg@rb.railnet.gov.in

List for Distribution :

1. General Managers, all Indian Railways & Production Units
2. Director Generals - RDSO, Manak Nagar, Lucknow and NAIR, Vadodara
3. Principal Chief Engineers and Chief Administrative Officers (Con.), All Indian Railways
4. CMDs/MDs/VC - IRCON, RITES, RVNL, DFCCIL, CONCOR, RLDA, KRCL, MRVC, CRIS
5. Directors - IRICEN/Pune, IRIEEN/Nasik, IRISET/Secunderabad, IRIMEE/Jamalpur and IRITM/Lucknow

Copy to :

- AM(CE), AM(Works), Adv.(L&A) and Adv.(Bridges) in Railway Board
- EDCE(G), EDCE(P), EDTk(M), EDTk(Mc), EDTk(P), EDCE(B&S), EDCE(B&S)-II, ED(Works), EDW(Plg.), ED/Proj.Mon., ED(L&A)-I, ED(L&A)-II, ED/E&HC, ED(PSU) and ED/Infra.Civil in Railway Board

(4)

Addendum & Corrigendum Slip (ACS) No. 01

To

Indian Railways Unified Standard Specifications (Works & Materials), 2010 : Volume-I

Amendment To Para (3) of Annexure 4.1 in Chapter - 4

Note on Thermo Mechanically Treated Bars

{At Page – 121 of IRUSS (W & M), 2010 - Volume-I}

Para 3.0 shall be read as under :

3.0 Properties

All TMT Reinforcement Bars shall be procured as per guidelines, contained in Railway Board's letters no. 2007/CE-I/CT/8, dated 01.05.2012, 07.03.2014 & 31.03.2015 and conforming to Grades, Chemical Composition and Mechanical Properties, as indicated in Tables A, B & C respectively.

Table – A : GRADES *(As Per IS: 1786)*

(a) Fe 415, Fe 415D, Fe 415S	**(b)** Fe 500, Fe 500D, Fe 500S
(c) Fe 550, Fe 550D	**(d)** Fe 600

Notes :

1. The figure following the symbol Fe indicates the specified minimum 0.2 percent proof stress or yield stress, in N/mm^2.
2. The letters D and S, following the strength grade indicates the categories with same specified minimum 0.2 percent proof stress/yield stress, but with enhanced and additional requirements.

Table – B : CHEMICAL COMPOSITION *(In Percent Maximum)*

Grade Constituent	Fe 415	Fe 415D	Fe 415S	Fe 500	Fe 500D	Fe 500S	Fe 550	Fe 550D	Fe 600
Carbon	0.30	0.25	0.25	0.30	0.25	0.25	0.30	0.25	0.30
Sulphur	0.060	0.045	0.045	0.055	0.040	0.040	0.055	0.040	0.040
Phosphorus	0.060	0.045	0.045	0.055	0.040	0.040	0.050	0.040	0.040
Sulphur + Phosphorus	0.110	0.085	0.085	0.105	0.075	0.075	0.100	0.075	0.075

Table – C : MECHANICAL PROPERTIES

{Strength in N/mm^2}

Grade	Fe 415	Fe 415D	Fe 415S	Fe 500	Fe 500D	Fe 500S	Fe 550	Fe 550D	Fe 600
Yield Stress (YS) *(Min.)*	415	415	415	500	500	500	550	550	600
Tensile Stress (TS) *(Min.)*	485	500	-	545	565	-	585	600	660
TS / YS Ratio	≥1.10	≥1.12	1.25	≥1.08	≥1.10	1.25	≥1.06	≥1.08	≥1.06
Elongation in % *(Min.)*	14.5	18.0	20.0	12.0	16.0	18.0	10.0	14.5	10.0

भारत सरकार Government Of India
रेल मंत्रालय Ministry Of Railways
(रेलवे बोर्ड) (Railway Board)

(5)

No. 2015/CE-I/CT/1/1/TS

New Delhi, Dated 24.08.2015

To,
As per list attached.

Sub : Checking of Tender Schedule by the Technical Staff.

While investigating a Central Vigilance Commission (CVC) referred complaint, it was observed that the Tender Schedule contained an irregular and contradictory 'foot-note' to a Non-Scheduled Item. The said 'foot-note' to the NS item had significant financial implications as it stipulated making extra payments, but no such extra payment was permissible as per the description of NS item. The stated Tender Schedule was neither checked by the office staff, SSE/Drg., nor was it put up to the Competent Authority for approval before calling the tender.

2. To obviate recurrence of such incident in future, it is desired that Zonal Railways / Production Units etc. must ensure that Tender Documents including Tender Schedules are invariably checked by the concerned technical staff in Division / Zonal Headquarter etc. and are approved by Competent Authority, before invitation of the tenders.

3. Please acknowledge and ensure accordingly.

24/08/15

(आलोक कुमार)
कार्यकारी निदेशक/सिविल इंजीनियरिंग(जी)/रेलवे बोर्ड
[Phone : 030-44803 (Rly.); 011-23383379 (MTNL); 09910487302 (CUG Mobile)]
e-mail address : edceg@rb.railnet.gov.in

Copy forwarded for information to :

(i) FA&CAOs, All Zonal Railways etc.

(ii) Dy. Comptroller and Auditor General of India (Railways), Room no. 224, Rail Bhawan, New Delhi (with 46 spare copies)

LIST

(6)

1. General Managers, All Indian Railways & Production Units.
1a. General Manager (Con), N.F. Railway, Guwahati.
2. Principal Chief Engineers, All Indian Railways.
3. Chief Administrative Officers (Con), All Indian Railways. (Except N.F. Railway)
4. Chief Vigilance Officers, All Indian Railways.

Copy to:

(A)

1. CAO/CAO(R), COFMOW, Tilak Bridge, New Delhi-110002.
2. CAO/CAO(R), Diesel Locomotive .Works,Patiala(Punjab).
3. CAO, Rail Coach Factory/Rae bareli Project, Kishanganj, Delhi- 7
4. CEE, Central Organisation for Railway Electrification (CORE), Allahabad

(B)

1. Director General, RDSO, Manak Nagar, Lucknow-226011.
2. Director General, National Academy of Indian Railways , Vadodara-390004
3. Chief Commissioner of Railway Safety, Ashoka Road, Lucknow-226001.

(C)

1. Director, IRICEN, Rail Path, Pune. Pin-411001 (Maharashtra).
2. Director, IRIEEN, P.B.No.-233, Nasik Road-422101 (Maharashtra).
3. Director, IRISET, Tarnaka Road, Lalla Guda , Secunderabad-500017
4. Director, IRIMEE, Jamalpur Distt., Jamalpur - 811214. (Bihar)
5. Director, IRITM, Saraswati Residential Estate, IRITM Campus, Manak Nagar Lucknow.
6. Director, JR RPF Academy, Lucknow

(D)

1. MD, DMRC, Metro Bhawan, 13, Fire Bridge Lane, Barakhamba Road, New Delhi- 110 001,
2. MD, CONCOR, Concor Bhawan, C-3, Mathura Road, Opp. Apollo Hospital, New Delhi- 110076.
3. IRCON International Limited, C-4, District Centre, Saket, New Delhi- 110017
4. MD, RITES Ltd., RITES Bhawan, Plot No.1, Sector-29, Gurgaon, Haryana-122001
5. MD, RVNL, August Kranti Bhawan,Plot No.25, 1st Floor, Bhikaji Cama Place, New Delhi-110066
6. MD, MRVC Ltd., Churchgate Station Bldg, Mumbai- 400020
7. CMD, Konkan Railway Corporation Ltd, Belapur Bhavan, Sector 11, C.B.D. Belapur, Navi Mumbai -400614
8. MD, DFCCIL, 5th Floor, Pragati Maidan Metro Station Building Complex, New Delhi-110001
9. MD, RLDA, Near Safdarjung Railway Station, Moti Bagh, Phase-I, New Delhi- 110021
10. CMD, RailTel Corporation of India Ltd., Plot no. 143, Institutional Area, Sector-44, Gurgaon, Haryana - 122003
11. RCF, Rae Bareilly, Kishan Ganj, Delhi.
12. CME, IROFAF, 12th Floor, Core-1, Scope Minar, Distt. Centre, Laxmi Nagar, Delhi- 110092
13. CAO, Indian Railways (Workshop Projects), Chamber Bhawan, Judge's Court Road, Anta Ghat, Patna-800001, Bihar.

(E)

1. General Secretary, IRCA, DRM Office, New Delhi.
2. General Secretary, AIRF, Rail Bhawan, New Delhi.
3. General Secretary, NFIR, Rail Bhawan, New Delhi.
4. General Secretary, IRPOF, Rail Bhawan, New Delhi.
5. General Secretary, FROA, Rail Bhawan, New Delhi.
6. General Secretary, AIRPA, Rail Bhawan, New Delhi.
7. General Secretary, AISC&STREA, Room no. 7, Rail Bhawan, New Delhi.
8. The Secretary, RBSS, Group (A) Officers Association, Rail Bhawan.
9. The Secretary, RBSS, Group (B) Officers Association, Rail Bhawan.
10. The Secretary, RBMSA, Rail Bhawan.
11. The Secretary, Railway Board , Group (D) Employees Association, Rail Bhawan.

Copy to: CRB, FC, ME, ML, MS, MM, MT, Secy., AM(CE), AM(WORKS), AM(PLG.) AM(STAFF), AM(Mech.), AM(Elec.), AM(PU), AM(Tele), AM(Sig.), AM(Traffic), AM(F), AM(B), Adv.(Projects), Adv.(L&A), Adv.(Vig.), Adv(Rates), AM(Stores), AM(IT), AM(T&C), AM(Comml.) DG(RHS), DG(RPF), Adv.(RE), Adv.Elec(G), EDTK(M), EDTK(MC), EDTK(P), EDW(Plg.), EDME(Track), EDCE(B&S), EDCE(RC&F), EDF(X)-I, EDF(X)II, DF(X)-II, ED(W), EDCE(P), ED(PROJECT), ED(L&A)-I, ED(L&A)-II, EDVE, ED/DM, ED(Safety), ED(Sig.), ED(Tele), EDRS(G), ED(E&R)EDEE(Dev.), EDEE(RS), ED(EEM), EDRE(S&T), EDE, EDE(N), EDE(Res.), EDFE, EDPC, ED(Accounts), ED(T&MPP), EDE(GC), EDME(CHG), EDME(F), EDME(Dev.),EDME(W), ED(Plg.), ED(CHG), EDRS(P), EDRS(S), EDF(S), ED(FC), EDPM, EDPG, EDTC(R), EDTT(F), EDTT(M), EDTT(S), EDV(S), EDV(T), DCE(B&S), DCE(P), Dir(L&A), JS(Conf.), JS(G), JS(P), LA, Eco.(Adv.) F(X)I, II, Vig.III, Vig.(Conf.), L&A. Track I & II, Telecom, Signal, RS(G), & Electrical Branches of Rly. Board.

भारत सरकार Government Of India
रेल मंत्रालय Ministry Of Railways
(रेलवे बोर्ड) (Railway Board)

(7)

No. 2014/CE-I/WP/5 **New Delhi, Dated 3rd September, 2015**

The General Managers,
All Indian Railways and PUs.

विषय : **Development and Implementation of e- procurement system (IREPS) in works contracts on Indian Railways – The prerequisites.**

In terms of instructions and budget announcement item of Hon'ble Minister for Railways, the work of "Development and Implementation of e-tendering in Works Contracts on Indian Railways" has been taken up by Railway Board and CRIS is developing the IREPS's Works module for implementation on Indian Railways.

This module has been targeted for implementation by 31.12.2015. Therefore, Zonal Railways need to ensure necessary infrastructure for its trial run by 30.09.15. The **pre-requisites** are as under :

(a) **Digital Signature Certificate for Railway Users** : This is required for authentication of Railway user. The Digital Signature Certificate in USB token, alongwith the token driver is to be procured from a Certifying Authority (CA) approved by Controller of Certifying Authorities (CCA). List of licensed CAs is available on www.cca.gov.in.

Digital signature is required for officials involved in Preparation of Tenders, Uploading of documents, Publication of tenders, Opening of tenders, Finalization of tenders, Post tender activities (Technical scrutiny, TC minutes preparation and signing), Admin activities like user creation/modification, management of tender opening roster etc. or any other activity which requires signing of form/document.

(b) **Digital Encryption Certificate** : Each tendering unit will require a Digital Encryption Certificate (DEC). Detailed guidelines for DEC issued by CRIS is enclosed herewith.

(c) **Wide publicity to Tenderers** : Wide publicity may be given through intimation & knowledge sharing to the prospective tenderers / bidders.

(d) **Registration of Tenderers/Bidders** : The prospective tenderers / bidders require a 'Class III Digital Signature' with company name from any Certifying Agency (CA) authorized by Controller of Certifying Authorities (CCA). They also have to submit online request for registration sufficiently in advance to get themselves registered on IREPS (Works) in order to participate in e-tendering in works contracts.

(e) **Computer and Internet Connection** : A computer with Windows O.S. (Windows 7.0 or higher), Internet explorer, Java and Broadband Internet connection.

Further, It is also desired that the excellences on Railways towards e-tendering, if any, may be shared for development & improvement of a user friendly and hassle free IREPS (Works) module for 'e-tendering in Works Contract' on IR.

संलग्नक / उपरोक्तानुसार

03/09/15

(आलोक कुमार)
कार्यकारी निदेशक / सिविल इंजीनियरिंग(जी) / रेलवे बोर्ड
[Phone : 030-44803:Rly; 011-23383379:MTNL; 09910487302:CUG mobile]
e-mail address: edceg@rb.railnet.gov.in

भारत सरकार Government Of India
रेल मंत्रालय Ministry Of Railways
(रेलवे बोर्ड) (Railway Board)

(8)

No. 2015/CE-I/IRUSS (W&M)/1 New Delhi, Dated 29th September 2015

Addressed to :
As per list below.

Sub : Addendum & Corrigendum Slip (ACS) No. 02 to Indian Railways Unified Standard Specifications (Works & Materials), 2010 - Volume-II for Polyethylene Water Storage Tank.

Ref : Railway Board's letter no. 2007/CE-I/CT/8, dated 01.05.2012 and 2007 /CE-I/CT/8, dated 31.03.15 and SER's letter no. Engg./IRUSS/Clari/9, dated 26.5.15.

In continuation to the approval of Board vide letters under reference, Ministry of Railways (Railway Board) have decided that Table 13.19 of Chapter - 13, page 544 of Indian Railways Unified Standard Specifications (Works & Materials), 2010 : Volume-II for Polyethylene Water Storage Tank be amended as shown in the enclosed Addendum & Corrigendum Slip (ACS) No. 02.

This issue with the approval of Additional Member (Civil Engg.), Railway Board.

संलग्नक / उपरोक्तानुसार

29/9/15

(आलोक कुमार)
कार्यकारी निदेशक / सिविल इंजीनियरिंग(जी) / रेलवे बोर्ड
[Phone : 030-44803 (Rly.); 011-23383379 (MTNL); 09910487302 (CUG Mobile)]
e-mail address : edceg@rb.railnet.gov.in

List for Distribution :

1. General Managers, all Indian Railways & Production Units
2. Director Generals - RDSO, Manak Nagar, Lucknow and NAIR, Vadodara
3. Principal Chief Engineers and Chief Administrative Officers (Con.), All Indian Railways
4. CMDs/MDs/VC - IRCON, RITES, RVNL, DFCCIL, CONCOR, RLDA, KRCL, MRVC, CRIS
5. Directors - IRICEN/Pune, IRIEEN/Nasik, IRISET/Secunderabad, IRIMEE/Jamalpur and IRITM/Lucknow

Copy to :

- AM(CE), AM(Works), Adv.(L&A) and Adv.(Bridges) in Railway Board
- EDCE(G), EDCE(P), EDTk(M), EDTk(Mc), EDTk(P), EDCE(B&S), EDCE(B&S)-II, ED(Works), EDW(Plg.), ED/Proj.Mon., ED(L&A)-I, ED(L&A)-II, ED/E&HC, ED(PSU) and ED/Infra./Civil in Railway Board

Addendum & Corrigendum Slip (ACS) No. 02

(9)

To

Indian Railways Unified Standard Specifications (Works & Materials), 2010 : Volume-II

Amendment To Table 13.19 of Para 13.22 in Chapter – 13
For Polyethylene Water Storage Tank

{At Page – 544 of IRUSS (W & M), 2010 - Volume-II}

Table 13.19 shall be read as under :

TABLE 13.19

SL	Minimum Net Capacity Upto Effective Height (Litres)	Overall Diameter Range (mm)	Minimum Wall And Bottom Thickness (mm)	Minimum Weight Of Empty Tank (Without Lid) (Kg)
(1)	*(2)*	*(3)*	*(4)*	*(5)*
1	200	650-850	3.0	7.8
2	300	650-850	3.0	9.0
3	400	700-980	3.5	15.0
4	500	800-1140	4.0	18.0
5	700	900-1140	4.4	23.0
6	1000	1000-1200	4.5	33.0
7	1500	1080-1450	4.5	47.0
8	1700	1300-1500	4.5	54.0
9	2000	1365-1500	5.4	64.0
10	2500	1380-1610	7.7	81.0
11	3000	1410-1800	8.1	96.0
12	4000	1450-1920	10.4	147.0
13	5000	1800-2110	10.7	180.0
14	6000	1800-2200	10.7	205.0
15	7500	1890-2250	10.7	239.0
16	10000	1900-2680	11.5	319.0
17	15000	2100-2680	11.5	408.0
18	20000	2100-3150	13.2	566.0

भारत सरकार Government Of India
रेल मंत्रालय Ministry Of Railways
(रेलवे बोर्ड) (Railway Board)

(10)

No. 2014/CE-I/WP/5

New Delhi, 23rd December, 2015

Addressed to :
As per list attached.

विषय : Newspaper advertisement for Implementation of e-procurement system (IREPS) in Works Contracts on Indian Railways.

संदर्भ : Railway Board's letter no. 2014/CE-I/WP/5, dated 03.09.2015.

In terms of instructions and Budget pronouncement items of Hon'ble Minister for Railways, the work of Development and Implementation of 'e-tendering in Works Contract' on Indian Railways has been taken up by Railway Board through CRIS. The Works Module of IREPS for e-tendering in Works Contracts is expected to be implemented in January 2016 and accordingly, its wide publicity through advertisement etc. is necessary for creating awareness amongst tenderers.

A standard draft newspaper notice is enclosed as Annexure-A. It is desired that such advertisements may be published widely to ensure mass awareness amongst tenderers and smooth implementation of 'e-tendering in Works Contracts'.

This may be treated as "Most Urgent".

संलग्नक / उपरोक्तानुसार

23/12/15

(आलोक कुमार)
कार्यकारी निदेशक/सिग्नल इंजीनियरिंग(जी)/रेलवे बोर्ड
[Phone : 030-44803; Rly: 011-23383379;MTNL:09910487302; CUG mobile]
e-mail address : edceg@rb.railnet.gov.in

Annexure- "A" (11)

Sample - Newspaper Advertisement for 'e-tendering in Works Contracts'

Indian Railways are in the process of switching over to e-tendering for Works Contracts from January, 2016. In the 'e-tendering system', electronic tenders will be uploaded on Indian Railways e-tendering site (IREPS), i.e. www.ireps.gov.in and for such electronic tenders, the offers by the tenderers can be submitted only electronically on the IREPS website. Submissions of manual offers against electronic tenders are not allowed and any manual offers, so submitted shall not be opened / considered.

For submission of electronic offers, the bidders will have to get themselves registered one time on the IREPS website. Registration is an online process without any payment. Interested bidders can apply for registration by clicking on the link 'New Vendors / Contractors (e-tender)' in the left navigation bar (Quick Links section) on the Home page of the website (www.ireps.gov.in). Registration on IREPS website may take some time; so, bidders are requested to register themselves at the earliest to avoid any inconvenience in submission of their offers.

The requirement for registration of bidders and submission of electronic offers are as under :

(a) A computer system alongwith proper internet connectivity

(b) Class III Digital Signature Certificate with company name : This certificate can be purchased from any Certifying Authority, authorized by Controller of Certifying Authorities, i.e. CCA/India. The list of Certifying Authorities is available on the website of Controller of Certifying Authorities (www.cca.gov.in).

A Help Desk has been set up to assist the bidders for registration and participation in e-tenders. Assistance from the Help Desk can be obtained telephonically or through e-mail. The details of Help Desk are available under Helpdesk link in the left navigation bar (Quick Links section) on the Home page of the website (www.ireps.gov.in).

भारत सरकार Government Of India
रेल मंत्रालय Ministry Of Railways
(रेलवे बोर्ड) (Railway Board)

(12)

No. 2014/CE-I/WP5

New Delhi, 31.12.2015

Addressed to :
As per list attached.

Sub : Training for development and implementation of IREPS in Works system of Indian Railways.

Ref : Railway Board's letter No. 2014/CE-1/WP/5 dt. 12.11.2015 & 04.12.2015

In terms of instructions and Budget Pronouncement items of Hon'ble Minister for Railways, work of development and implementation' of 'e-tendering in Works Contract' on Indian Railways is in progress. The IREPS's works module for e-tendering in Works Contracts has been developed by Railway Board through CRIS.

In this connection, nominated System Administrators for 'IREPS Works Module' from Zonal Railways, PUs, CTIs and Divisions were trained regarding basics and working of the module during '2 days Hands on Trainings / Workshops' held in CRIS office, New Delhi. The System Administrators, so, trained may now be advised to familiarize all users of Railways with the 'IREPS Works Module' on top priority.

It is desired that a feedback may be sent by 15th January' 2016 regarding number of user trained over your Railway / PU/ CTI.

31/12/15

(आलोक कुमार)
कार्यकारी निदेशक/सिविल इंजीनियरिंग(जी)/रेलवे बोर्ड
[Phone: 030-44803: Rly: 011-23383379:MTNL:09910487302: CUG mobile]
e-mail address: edceg@rb.railnet.gov.in

भारत सरकार Government Of India
रेल मंत्रालय Ministry Of Railways
(रेलवे बोर्ड) (Railway Board)

(13)

No. 2014/CE-I/WP/5 **New Delhi, 8th January, 2016**

Addressed to :
As per list attached.

Sub : Development and Implementation of e-tendering in works contracts on Indian Railways through web application - IREPS (Works) Module.

Ref : (i) Railway Board's letter no. 2014/CE-I/WP/5, dated 03.09.2015.
(ii) Railway Board's letter no. 2014/CE-I/WP/5, dated 24.09.2015.
(iii) Railway Board's letter no. 2014/CE-I/WP/5, dated 31.12.2015.

In terms of instructions and Budget Pronouncement by Hon'ble Minister for Railways, work of development of IREPS's Works Module for 'e-tendering in Works Contract' on Indian Railways has been completed and it is in final stages of implementation. Launching of the web application for it is expected in the last week of January 2016.

System Administrators at HQ and Divisional levels have also been imparted 'Hands on Training' through three workshops at Delhi alongwith interaction with Chief Engineers and FA&CAOs in last 2 months period.

In order to ensure smooth transition from manual to e-tendering process, Railways are advised that at least 50% of the forthcoming tenders, valuing between Rs. 2 cr. and Rs. 20 cr. from all departments, should be planned in e-tendering mode.

Subsequently, after getting the experience and incorporating required improvements to the module, e-tendering in all works contracts of Indian Railways is planned to be made mandatory from April 2016 onwards.

In view of above, it is desired that all arrangements, like computer room with internet connectivity, training to Railway and other users alongwith the related pre-requisites of Digital Signature Certificates, Encryption Certificates and on-line payment facility etc. may be ensured at the earliest.

Receipt of the letter may please be acknowledged and Board be advised of the action taken in this regard.

08.01.16

(आलोक कुमार)
कार्यकारी निदेशक / सिविल इंजीनियरिंग(जी) / रेलवे बोर्ड
[Phone : 030-44803 (Rly.); 011 23383379 (MTNL); 09910487302 (CUG Mobile)]
e-mail address : edceg@rb.railnet.gov.in

(14)

CIRCULATION LIST

1. General Managers, All Indian Railways & Production Units
2. General Manager (Const.), N.F. Railway, Guwahati
3. Director General, RDSO, Manak Nagar, Lucknow
4. Director General, National Academy of Indian Railways, Vadodara-390004
5. Director/IRICEN, Rail Path, Pune - 411001 (Maharastra)
6. Director/IRIEEN, P.B. No.- 233, Nasik Road - 422101
7. Director/IRISET, Tarnaka Road, Lalla Guda, Secunderabad - 500017
8. Director/IRIMEE, Jamalpur - 811214
9. Director/IRITM, IRITM Campus, Manak Nagar, Lucknow
10. CMD/MD, IRCON, RITES, RVNL, DFCCIL, KRCL, RLDA, IRSDA.
11. MD, Centre for Railway Information System (CRIS), Chanakyapuri, New Delhi
12. CAO/COFMOW, Railway Office Complex, Tilak Bridge, New Delhi – 110002.

Copy for information to :

- EDPG/MR and PS/MR for kind information of Hon'ble MR please.
- Adv.PG/MSR, PS/MSR and ED/Innovation/MSR for kind information of Hon'ble MSR please.
- PSO/Sr.PPS to CRB, ME, FC, MM, ML, MT, MS and Secretary for kind information of CRB, ME, FC, MM, ML, MT, MS and Secretary please.

(15)

भारत सरकार Government Of India
रेल मंत्रालय Ministry Of Railways
(रेलवे बोर्ड) (Railway Board)

No. 2014/CE-I/WP/5 **New Delhi, 27.01.2016**

Addressed to :
As per list attached.

Sub : Development and implementation of IR's e-procurement system (IREPS) in Works Contracts on Indian Railways.

Ref : (i) Railway Board's letter no 2014/CE-I/WP/5, dated 03.09.2015.
(ii) Railway Board's letter no. 2014/CE-I/WP/5, dated 24.09.2015.
(iii) Railway Board's letter no. 2014/CE-I/WP/5, dated 31.12.2015.
(iv) Railway Board's letter no. 2014/CE-I/WP/5, dated 06.01.2016.

In terms of instructions and Budget Pronouncement items of Hon'ble Minister for Railways, work of development and implementation of 'e-tendering in Works Contract' on Indian Railways is in progress. The IREPS's works module for e-tendering in Works Contracts has been developed by Railway Board through CRIS and is ready for launching. Divisional and other System Administrators have been adequately trained through 'Two days Hands on Training / Workshop'.

Zonal Railways/PUs were advised to arrange for necessary pre-requisite like Digital Signature Certificate, Digital Inscription Certificate and arrangement like computer room with internet connection vide Railway Board's letter of even no., dated 03.09.2015 & 08.01.2016. Further system administrator of Railways / PUs were also given hands on training/workshop for further proliferation of IREPS Works Module on their Railways /PUs/Divisions and a feedback was asked by 15.01.2016.

The Portal is ready for launching of IREPS's Works Module and currently kept on trial server. However, during interaction with Railways on the subject, it is learnt that few Railways have still not updated themselves for e-tendering which is leading to delay in its implementation.

In view of above it is desired that all required arrangement like Digital Signature Certificate, Digital Inscription Certificate and arrangement like computer room with internet connection as advised earlier may be done immediately, for launching of e-tendering in all Indian Railways/PUs on 1st February, 2016.

This may please be treated as 'Most Urgent'.

27/1/16

(आलोक कुमार)
कार्यकारी निदेशक/सिविल इंजीनियरिंग(जी)/रेलवे बोर्ड
[Phone: 030-44803: Rly: 011-23383379:MTNL:09910487302: CUG mobile]
e-mail address : edceg@rb.railnet.gov.in

(16)

CIRCULATION LIST

1. General Managers, All Indian Railways & Production Units
2. General Manager (Con), N.F. Railway, Guwahati
3. Director General, RDSO, Manak Nagar Lucknow
4. Director General, National Academy of Indian Railways, Vadodara-390004
5. Director/IRICEN, Rail Path, Pune, Pin- 411001 (Maharastra)
6. Director/IRIEEN, P.B. No.- 233, Nasik Road-422101
7. Director/IRISET, Tarnaka Road, Lalla Guda, Secunderabad- 500017
8. Director/IRIMEE, Jamalpur Distt., Jamalpur- 811214
9. Director/IRITM, Sarswati Residential Estate, IRITM Campus, Manak Nagar, Lucknow
10. MD, RLDA, Near Safdarjung Railway Station, Moti Bagh, Phase-I, New Delhi-110021
11. MD, Centre for Railway Information System (CRIS), Chanakyapuri, Near National Rail Museum, New Delhi
12. CAO/COFMOW, Railway Office Complex, Tilak Bridge, new Delhi – 110002.

भारत सरकार Government Of India
रेल मंत्रालय Ministry Of Railways
(रेलवे बोर्ड) (Railway Board)

(17)

No. 2014/CE-I/WP/5 **New Delhi Dated 5th February, 2016**

Addressed to :
As per list attached.

Sub : Implementation of e-tendering in Works Contracts on Indian Railways through IR's E - Procurement System (IREPS).

Ref : Railway Board's Letters of even no., dated 03.09.2015, 24.09.2015, 31.12.2015, 08.01.2016 and 27.01.16

In above references, Web-based application for e-tendering in Works Contracts on Indian Railways has been inaugurated & launched by the Hon'ble Minister for Railways on 1st February, 2016 in a function, held in Railway Board. The 'works module' of IREPS (IR's E - Procurement System) has been developed in-house by IR through CRIS.

As already advised through letters and also 'Hands on Training' / Workshops to various System Administrators of the Railways / PUs; all the field units & tendering units on Railways etc. should henceforth ensure implementation of e-tendering across all departments, dealing with works contracts.

Also, all arrangements, like computer room with internet connectivity, training to Railway and other users alongwith related pre-requisites of Digital Signature Certificates, Encryption Certificates and on-line payment facility etc. should be ensured.

To start with, as already advised, all tendering units on Zonal Railways, PUs etc. shall adopt e-tendering in at least 50% of the works tenders, of all departments, valuing between Rs. 2 crore and 20 crore in February & March 2016; so that better understanding of the system by Railway officials and tenderers may be possible.

Further, it has also been decided to implement e-tendering in all Works Tenders, to be invited w.e.f. 01.04.2016. Any exception to it, i.e. adoption of manual process instead of e-tendering, due to unavoidable circumstances, will require prior approval as under :

(a) All tenders of Division/Workshop	*D.R.M., CWM*
(b) All tenders of Construction Organization	*CAO/(C)*
(c) For all other tenders of HQrs.	*General Manager*

Monthly exception report, with details of tenders not invited on IREPS portal through e-tendering mode should be sent to Railway Board.

(आलोक कुमार) 5/2/16
कार्यकारी निदेशक / सिविल इंजीनियरिंग(जी)/रेलवे बोर्ड
[Phone : 030-44803 (Rly.); 011-23383379 (MTNL); 09910487302 (CUG Mobile)]
e-mail address : alokalokindia@rediffmail.com and edceg@rb.railnet.gov.in

Circulation List :

(18)

1. General Managers, All Indian Railways & Production Units
2. General Manager (Con), N.F. Railway, Guwahati
3. Director General, RDSO, Manak Nagar, Lucknow
4. Director General, National Academy of Indian Railways, Vadodara-390004
5. Pr.CEs, CAOs/C and FA&CAOs, All Indian Railways & Production Units
6. Director/IRICEN, Rail Path, Pune, Pin- 411001 (Maharastra)
7. Director/IRIEEN, P.B. No.- 233, Nasik Road-422101
8. Director/IRISET, Tarnaka Road, Lalla Guda, Secunderabad- 500017
9. Director/IRIMEE, Jamalpur Distt., Jamalpur- 811214
10. Director/IRITM, Sarswati Residential Estate, IRITM Campus, Manak Nagar, Lucknow
11. Director/CTARA, Tarnaka, Secunderabad - 500017
12. MD, RLDA, Near Safdarjung Railway Station, Moti Bagh, Phase-I, New Delhi- 110021
13. MD, Centre for Railway Information System (CRIS), Chanakyapuri, Near National Rail Museum, New Delhi
14. CAO/COFMOW, Railway Office Complex, Tilak Bridge, new Delhi – 110002.

Copy to :

1. EDPG/MR and PS/MR for kind information of Hon'ble MR please.
2. Adv.PG/MSR, PS/MSR and ED/Innovation/MSR for kind information of Hon'ble MSR please.
3. PSO/Sr.PPS to CRB, ME, FC, MM, ML, MT, MS and Secretary for kind information of CRB, ME, FC, MM, ML, MT, MS and Secretary please.

भारत सरकार Government Of India
रेल मंत्रालय Ministry Of Railways
(रेलवे बोर्ड) (Railway Board)

(19)

सं. 2015/CEDO/SD/IRSOD/O/1 New Delhi, Dated 15.01.2016

The General Managers,
All Indian Railways.

विषय : Date of applicability of Addendum & Corrigendum Slips (ACSs) to IRSOD(BG), 2004.

संदर्भ : Board's letter no. 2015/CEDO/SD/IRSOD/O/1, dated 18.6.2015.

In continuation to the Board's letter referred above, the issue of date of applicability of Addendum & Corrigendum Slips (ACSs) to IRSOD has been examined in Railway Board.

It is accordingly clarified that applicability of the revised provisions of ACSs to IRSOD, issued from time to time will be prospective to the date of issue of the ACS and these amendments would be applicable only to those cases where the connected works have not commenced on the date of issue of the Addendum & Corrigendum Slip.

However, in those cases, where plans & estimates have already been approved/ sanctioned prior to issue of the ACS and incorporation of the same are found not feasible, then approval of the Pr. Chief Engineer shall be obtained for adoption of the earlier provisions of IRSOD, duly recording reasons for the same.

Railways may take action accordingly.

15/1/16

(आलोक कुमार)
कार्यकारी निदेशक / सिविल इंजीनियरिंग(जी) / रेलवे बोर्ड
[Phone : 030-44803 (Rly.); 011-23383379 (MTNL); 09910487302 (CUG Mobile)]
e-mail : edceg@rb.railnet.gov.in

Copy forwarded for information to :

1. The Chief Commissioner of Railway Safety, office compound of DRM/NER, Ashok Marg, Lucknow - 226001.
2. The Director General, RDSO, Manak Nagar, Lucknow

(20)

भारत सरकार Government Of India
रेल मंत्रालय Ministry Of Railways
(रेलवे बोर्ड) (Railway Board)

No.2007/CEDO/SD/O **New Delhi, Dated 26.02.2016**

The General Managers,
All Indian Railways.

Sub : Condonation to infringing dimensions w.r.t. provisions of IRSOD.

Ref : Railway Board's letters no. 2007/CEDO/SD/O, dated 08.01.15 and 07.09.15.

In a recent case, sent by one of the Railways to Railway Board for sanction of condonation to infringing dimensions w.r.t. provisions of IRSOD; it has been observed that the infringement could have been avoided, if proper planning at initial stage was done by Railways. Also, CCRS had not recommended the case for sanction of condonation. Board has taken a serious note on the matter and have decided to fix responsibility at appropriate level for failure in this regard.

In continuation to the letters under reference, it is advised that dimensions mentioned in IRSOD are to be strictly followed by all concerned and if at all, after exploring all the possibilities, the infringements are unavoidable, necessary condonation should be processed through CRS/CCRS well in time and before starting the work at site.

26/2/16

(आलोक कुमार)
कार्यकारी निदेशक/सिविल इंजीनियरिंग(जी)/रेलवे बोर्ड
[Phone : 030-44803 : Rly.; 011-23383379 : MTNL; 09910487302 : CUG Mobile]
e-mail address : edceg@rb.railnet.gov.in

Copy to :

- The Chief Commissioner of Railway Safety, Office Compound of DRM/NER, Ashok Marg, Lucknow - 226001.
- The PCEs, CAOs(C), CEEs, CMEs and COMs, All Indian Railways.
- Advisor/Safety and EDs - Works, Proj.Mon., RE(P), SD, ME/Chg., ME/Frt., ME/Traction and TT(S); Railway Board

(20-A)

भारत सरकार Government Of India
रेल मंत्रालय Ministry Of Railways
(रेलवे बोर्ड) (Railway Board)

सं. 2015/CEDO/SD/IRSOD/O/1 **New Delhi, Dated 18.06.2015**

The General Manager,
Southern Railway,
Chennai

विषय : Chengalpattu – Villupuram Doubling : Opening of the converted B.G. line for a length of 20 kms between Chengalpattu (Km 59.840) & Karunguzhi (km 80.149) stations for public carriage of passengers – Padalam Halt station.

संदर्भ : (i) Board's letters no. 2011/CEDO/SD/IRSOD/Elect./02,dated 21.7.14
(ii) ACS-16 vide Board's letter no. 2015/CEDO/SD/IRSOD/O/01, dated 12.5.15.
(iii) CAO(C)/SR's letter no. W.347/XXII/17/CN., dated 17.6.15.

The issues mentioned in Southern Railway's letter under reference (iii) above, have been examined in Railway Board.

Note (e) below Para 2 of Chapter II of IRSOD as per ACS-16 {Ref.(ii) above} reads as under :

(e) For above purpose, a Station Yard means –
(1) Station Yard will be taken to extend –
(i) On single line ..... end of the station.
(ii) On double line ..... last stop signal of each line.
(iii) On double line ..... last stop signal of each line.
(2) There must be no change of grades within 30 metres of any points or crossings.
(3) These provisions shall also apply to Flag station and Halt station.

It was being observed by Board that subsequently, while converting Halt/Flag stations to crossing stations, gradient in station yards continued to remain safety issue in train operation and condonations were required to be sanctioned, if these stations were not planned flatter than the prescribed gradient of 1 in 400. It has, therefore, been approved that the provision of maximum (steepest) gradient of 1 in 400 for station yard shall also be applicable for Halt/Flag station.

It is also clarified that ACSs to IRSOD have only perspective effect, as brought out in Railway Board's letter at Ref. (i) above, which is reiterated as under :

"The issues mentioned in the Addendum & Corrigendum Slips (ACSs) to IRSOD(BG), 2004 shall be applicable only to those works which are yet to started on the date of issue of the ACS. If the work has already been completed by the Railway before the issue of the ACS by Railway Board, the concerned PHOD of the Railway shall make an endorsement to this effect in the Application to the CRS and no condonation w.r.t. the modified provisions as per the ACS shall be required."

18.06.15

Encl : As above

(आलोक कुमार)
कार्यकारी निदेशक / सिविल इंजीनियरिंग (जी) / रेलवे बोर्ड
[Phone : 030-44803 (Rly.); 011-23383379 (MTNL); 09910487302 (CUG Mobile)]
e-mail address : edceg@rb.railnet.gov.in

Copy forwarded for information to :

(i) The Chief Commissioner of Railway Safety, Office Compound of DRM/NER, Ashok Marg, Lucknow – 226001.

(ii) The General Managers, All India Railways.

(21)

भारत सरकार Government Of India
रेल मंत्रालय Ministry Of Railways
(रेलवे बोर्ड) (Railway Board)

No. 2007/CEDO/SD/O **New Delhi, Dated 08.01.2015**

The Director General,
RDSO,
Manak Nagar, Lucknow.

Sub : Design condonation of infringements to various provisions of IRSOD.

It has been observed by Board that design condonations of infringements to various provisions of Indian Railways Schedule of Dimensions 2004 (IRSOD) are processed in a very routine manner by RDSO, especially w.r.t. development and introduction of new rolling stocks on IR system.

The provisions of IRSOD are very sacrosanct and developmental exercise should be done with due consideration of these provisions, so that there are no issues w.r.t. condonation to such provisions.

All concerned may please be advised and receipt of the letter may be acknowledged.

08.01.15

(आलोक कुमार)
कार्यकारी निदेशक / सिविल इंजीनियरिंग(जी) / रेलवे बोर्ड
[Phone : 030-44803 (Rly.); 011-23383379 (MTNL); 09910487302 (CUG Mobile)]
e-mail address : edceg@rb.railnet.gov.in

Copy to :

- The GMs/All Indian Railways, including PUs.
- PSOs/Sr.PPS to ME, MT, MM & ML for kind information of ME, MT, MM & ML.

(22)

भारत सरकार Government Of India
रेल मंत्रालय Ministry Of Railways
(रेलवे बोर्ड) (Railway Board)

No. 2007/CEDO/SD/O

New Delhi, Dated 07.09.2015

The General Managers,
All Indian Railways.

Sub : Condonation of infringements to various provisions of IRSOD.

It has been observed by Board that condonation of infringements to various provisions of Indian Railways Schedule of Dimensions 2004 (IRSOD) are processed in a very routine manner especially, w.r.t. clearances from track centre/gradients and other engineering structures etc. by Railways requiring imposing speed restrictions or additional safety precautions.

The provisions of IRSOD have been made with due consideration and are sacrosanct. Works should be planned & executed in such a manner that there is generally no need to violate provisions of IRSOD. If, however, due to extreme exigencies, cases of condonation of infringement to IRSOD are to be considered, the Railway should exhaust following measures before sending such cases to Board :

(1) Elimination of infringement by diligent/detailed site inspection (at times, without any investment).

(2) Elimination by way of a permanent solution in near future; which may require decision making at higher level and involves additional investment.

(3) Railway should approach Board where elimination of the infringements is unavoidable or is not feasible and obtaining sanction for condonation from Board is the only viable option available.

It is, therefore, desired that proper planning should be done and sanction for condonation to IRSOD provisions should be taken in advance before starting the work at site.

Receipt of the letter may be acknowledged.

07/09/15

(आलोक कुमार)
कार्यकारी निदेशक / सिविल इंजीनियरिंग(जी) / रेलवे बोर्ड
[Phone : 030-44803 (Rly.); 011-23383379 (MTNL); 09910487302 (CUG Mobile)]
e-mail : edceg@rb.railnet.gov.in

Copy for information to :

- PSOs/Sr.PPS to ME, MT, MM & ML for kind information of ME, MM, ML and MT.
- The PCEs & CAO(C)s of All Indian Railways, including PUs.
- CMDs/MDs - IRCON, RITES, RVNL, DFCCIL, CONCOR and MRVC.

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

No. 2009/CE-II/TK/1 (Policy) New Delhi, Dated 28th Apr, 2015

Principal Chief Engineers,
All Indian Railways.

Sub: Rear-window inspections.

Rear-window inspection is also prescribed in the Schedule of Inspections for Engineering Officers at various levels. However, it is noticed that these are not being carried out in full. Therefore, please ensure that AENs & Sr. DENs and Officers at Headquarters carry out rear-window inspections. As regards AENs, they may be directed to travel by the guard-van of express trains having a trailing window or where not available, in the brake-van of goods trains.

ME desires that PCEs also carry out rear-window inspections frequently.

(S.S.Narayanan)
Additional Member (Civil Engg.)
Railway Board

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

(24)

No. 2006/CE-II/Safety/1

New Delhi, dt. /06/15.

Principal Chief Engineers,
All Zonal Railways

Sub: Monsoon Precautions.

Monsoon is about to set in most parts of India. Railways must have already taken action in regard to necessary precautions as prescribed in Chapter VII –Part 'B' – "Pre-monsson Precautionary measures" of IRPWM which inter-alia include patrolling of track and vulnerable bridges, availability of reserve materials for restoration, relief girders and other necessary equipment, Inspection of Railway Affecting works & Weather warning and action to be taken. Some of the activities related to subject are mentioned below:

(i) All catch water drains and side drains must be cleared of silt, vegetation and other obstructions to ensure free flow and quick drainage of storm water.

(ii) Water shall not be allowed to stagnate on the track. For this purpose, cross drains should be provided at regular intervals. In yards, cross drains and longitudinal drains should be cleared/provided to proper grades.

(iii) In hilly areas, where there is incidence of falling boulders, a survey should be carried out to locate loose boulders. Such loose boulders should be dropped in a systematic manner.

(iv) Vulnerable locations/kilometrages should be reviewed jointly by the Assistant Engineers and Divisional Engineers on the basis of past history and pre-monsoon inspections and the register of vulnerable locations should be brought up-to-date.

(v) As per Chapter -1 "Part B" – It is the duty of Permanent Way Officials/Men that trees in proximity to and likely to foul the track during a storm should be felled (para 125 of IRPWM).

As per para 1001(3) of IRPWM, in the event of abnormal rainfall or storm during day or night, patrolling should be organized. Also, Drainage of track is very vital for its satisfactory behavior. The drainage in station yards, most of which are track circuited now-a-days, is of paramount importance not only from track maintenance point of view but also from safety and operation points of views Para 240 & 279 of IRPWM clearly stipulates about proper drainage in station yards and track circuited areas.

Railways should confirm the action taken in this regard.

11/06/15.

(S.S. Gupta)
Executive Director CE (P)
Railway Board.

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

***

No. 2013/CE-II/CS/4 New Delhi, dated 18.06.2015

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 CAO/Const. All Indian Railways.
FA & CAO, All Indian Railways.
The General Managers (Engg.) – ICF/Chennai, RCF/Kapurthla, DLW/Varanasi, CLW/Chittranjan, W&AP/Yelahanka, Bangalore & DMW/Patiala.

The Director General (Track), RDSO/Alambagh, Lucknow.
Chief Commissioner of Railway Safety, Lucknow.

Managing Director/IRCON, C-4, District Centre, Saket, New Delhi.
Managing Director/RITES, RITES Bhawan, Sector-29, Gurgaon (Haryana) – 122001.
Managing Director/DMRC, Metro Bhawan, Barakhamba lane, New Delhi.
Managing Director/CONCOR, CONCOR Bhawan, C-3, Mathura Road, Opp. Apollo Hospital New Delhi-110016.
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., Ist Floor Jeeven Tara Building, Gate No.4, Parliament Street, New Delhi.
Managing Director/MRVC, Church Gate station Building 2nd Floor, Mumbai – 400020.
Managing Director/RLDA, IRCON Office Compound, Next to Safdarjang Rly. station, Motibagh-I, New Delhi.
Managing Director/Konkan Railway Corporation Ltd, Belapur Bhawan, Sector-11, CBD Belapur, Mumbai Pin - 400614.
Director/IRICEN, Pune-411001.
Director/IRIEEN, Post Box 233, Nasik Road - 422101 (Maharashtra).
Director/IRISET, Tarnaka Road, Secunderabad - 500017.
Director/IRIMEE, Jamalpur.
Director/IRITM, Vill. Kanausi, Hardoi, Manik Nagar, Lucknow.
Director General/National Academy of Indian Railways, Vadodara.
Genl. Secretaries, AIRF, NFIR, IRPOF, FROA, AIRPFA, DAI (Railways) Rail Bhawan, New Delhi.

Sub: Advance Correction Slip No.137 to the Indian Railways Permanent Way Manual.

Ministry of Railways (Railway Board) has decided that correction/addition as indicated in the enclosed Advance Correction Slip No.137 dated 18.06.2015, to relevant para of the IRPWM, be made.

Receipt of this letter may please be acknowledged.

(Pankaj Tyagi)
Director Civil Engg.(P),
Railway Board.

(26)

No. 2013/CE-II/CS/4 **New Delhi, dated 18.06.2015.**

Copy to : CRB, ME, MS, MM, MT, ML, 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.), Adv(L&A), Adv.(Bridges), Adv(Safety).

EDCE(P), EDTK(M), EDTK(MC), EDTK(P), EDCE(G), EDCE(B&S)-I, EDCE(B&S)-II, ED(L&A)-I, ED(L&A)-II, ED(L&A)-III, ED(Works), EDW(Plg.), ED/Infra./Civil, ED/PSU, ED/Proj.M, OSD(ME), EDV(E), EDF(X)-II, ED/PM.

DTK(MC), DTK(M), DTK(P), DCE(B&S), DCE(B&S)II, DCE(G), Dir.(Works) I & II, Dir. Works(Plg.), Dir.(L&A), DVE-I & DVE-II, Dir./TMS, Dir.(PSU), Dir.(WCS), Dir./Safety-IV, IPWE(I).

INDIAN RAILWAYS PERMANENT WAY MANUAL
ADVANCE CORRECTION SLIP No.137 dated 18.06.2015

1. The existing Para 254 of Indian Railways Permanent Way Manual shall be replaced with the following:

Para 254: (1) In stacking rails, care shall be taken that –

(a) The ground is level and well drained;

(b) Free rails are supported at least at four points, evenly along their length. Welded rail panels shall be so spread on cess as to rest evenly along their entire length on supports spaced at 4 meters center to center to prevent formation of kinks.

(c) Each stack of the rail should be of the same section and class; and

(2) Detailed guidelines on stacking of rails as contained in RDSOs Guidelines for Handling and Stacking of Rails, October 2014 (CT-35) shall be followed.

2. New Para 255(6) may be added to Indian Railways Permanent Way Manual as under:-

Para 255(6): Detailed guidelines on handling of rails as contained in RDSOs Guidelines for Handling and Stacking of Rails, October 2014 (CT-35) shall be followed.

3. The existing Para 257 (4) (b) of Indian Railways Permanent Way Manual shall be replaced with the following:

Para 257 (4) (b) – obsolete rails sections.

4. New Para 310(7) may be added to Indian Railways Permanent Way Manual as under:-

Para 310(7): Detailed guidelines on unloading of rails and related to operation of End Unloading Roller Rakes as contained in RDSO's Guidelines for Handling and Stacking of Rails October 2014 (CT-35) shall be followed.

5. The existing Para 317 (3) (b) of Indian Railways Permanent Way Manual shall be replaced with the following:-

Para 317 (3) (b): The renewal should as a rule be carried out with standard rail sections, in accordance with the standard drawings and not with obsolescent sections. Special crossing in main line, loops and sidings should be replaced with standard crossings.

6. The existing Para 814 (1) (a) of Indian Railways Permanent Way Manual shall be replaced with the following:-

Para 814. Permanent speed restriction indicators – (1) Permanent speed restriction boards:- (a) Permanent speed restrictions in force are notified in working time-tables.

.....2/-

The speed indicators are erected to indicate to the Drivers the speed restrictions to be observed e.g., between stations, and at stations due to weaker track/bridges, restrictions on curves, grades and points and crossings etc.

7. The existing Para 1304 (3) of Indian Railways Permanent Way Manual shall be replaced with the following:-

Para 1304 (3): For a major bridge or when special spans (designed and constructed by zonal railways based on site requirement) are used, a certificate on Form (Annexure 13/3) issued by Deputy Chief Engineer (Bridges) to the effect that the bridge or bridges are designed to carry the axle loads proposed to be run, should accompany the application. The bridge certificate will be countersigned by the Chief Bridge Engineer/Chief Engineer.

*****

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2015/CE-II/Accident /7 Dated: .07.2015

Principal Chief Engineers,
All Zonal Railways.

Sub: Availability of P-way material on material train of ART.

Recently, on one of the Zonal Railway there was an abnormal delay in restoration of track after derailment. The main reason for abnormal delay was non-availability of ST Sleepers on material train of ART. It was learnt that ST Sleepers were not available on any of the ARTs on that Zonal Railway.

AM/CE has desired that all the Zonal Railways must equip themselves with ST Sleepers on material train of ARTs for speedy temporary restoration of track after the accident/breaches. Therefore, All Zonal Railways must ensure and conform the availability of padded ST Sleepers for 52kg/60kg rails on material train of ARTs.

(Pankaj Tyagi)
Director Civil Engg. (Plg.)
Railway Board

(30)

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

No.2015/CE-II/Accident/1 New Delhi, dated 28.07.2015.

Principal Chief Engineers,
All Zonal Railways.
CR, ER, ECR, ECoR, NR, NCR, NER, NFR.
NWR, SR, SCR, SER, SECR, SWR, WR, WCR.

(16) → { }

Sub: Counselling of SEs/JEs (P.way) and Trackmen.

Recently, on one of the Zonal Railway a derailment involving passenger train has occurred. The prima facie cause of the derailment has been reported as "sinkage of track". Zonal Railway has reported that while attending mud pumping location after rain, cross level difference got developed due to which derailment occurred.

In view of the above, Additional Member/Civil Engineering has directed that Railways should carry out counselling of Section Engineers/Junior Engineers (P.way) & Trackmen working on such locations to ensure that track parameters are within limits before allowing trains.

(S.S. Gupta) 28/7
Executive Director Civil Engg.(P)
Railway Board.

29/07/15

(31)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2006/CE-II/Safety/1 New Delhi, dt. 05/08/15.

Principal Chief Engineers,
All Zonal Railways

Sub: Monsoon Precautions.
Ref: Railway Board's letter of even No. dated 11.06.2015.

Railways were advised to take necessary action as contained in Chapter VII- Part B– "Pre-monsoon Precautionary measures" and para 1001(3) of IRPWM vide letter referred above. The provisions contained in para 1001(3) are reiterated below:-.

Para 1001(3) Gang patrol during abnormal rainfall or storm- In the event of abnormal rainfall or storm during day or night, the Mate should, on his own initiative organize patrolling over the length affected, independently of other patrolling, if any being done. This patrol should, in case of heavy rainfall, confine its inspection to known points of danger, such as cutting or culverts likely to scour, banks affected by tanks likely to breach and bridge approaches. In case of high winds, the patrolman should inspect the length of track likely to be fouled by falling of tree etc.

This para also stipulates that PWI after receipt of information regarding storms, gales or heavy rainfall, will arrange to advise monsoon patrolman, watchman and gangmates to be extra vigilant and be prepared to introduce patrolling, as necessary as referred in Para 728 of IRPWM.

The main stipulations of Para 728 are as under:-

(i) Arrangement should be made with concerned meteorological centre for receipt of bad weather warnings which should cover both high velocity winds and cyclones as well as heavy rainfall.

(ii) The Permanent Way Inspector on receipt of weather/cyclone warning, should arrange to advise monsoon patrolmen/watchmen and Gang Mates to be extra vigilant. During the fair season, he should introduce monsoon patrolling as soon as possible and also post watchman as required at all vulnerable locations and bridges by day as well as by night for a period extending upto 48 hours beyond the period specified in the weather/cyclone warning message.

The Permanent Way Inspector should be out in his section as far as possible by trolley during the period of warning and 48 hours beyond.

(iii) On receipt of advice from the Station Master, the Gang Mate should take the following action :-

(a) The Mate of station yard gang should depute two reliable gangmen provided with patrolmen's equipment for patrolling the block sections on either side and for alerting the intermediate Gangmates.

(b) Should there by very heavy rain or a severe storm weather during the monsoon or fair season, the mate and Gangmen of all gangs on their own initiative should commence monsoon patrolling by day as well as night. Similar action to carry out patrolling should be taken on receipt of bad weather warning for the duration of weather warning and 48 hours beyond.

(iv) Zonal Railway may issue instructions in the form of joint circular to suit the local requirements.

(v) Inspecting officials should test the knowledge of Gang Mates and Gangmen about the instructions contained in IRPWM.

Railways should ensure strict compliance and confirm the action taken on the above provisions contained in IRPWM.

5/8/15

(S.S. Narayanan)
Addl. Member Civil Engineering
Railway Board.

(33)

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

No. 2011/CE-II/CS/3 **New Delhi, dated 25.08.2015.**

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 CAO/Const. All Indian Railways.
FA & CAO, All Indian Railways.
The General Managers (Engg.) – ICF/Chennai, RCF/Kapurthla, DLW/Varanasi, CLW/Chittranjan, W&AP/Yelahanka, Bangalore & DMW/Patiala.

The Director General (Track), RDSO/Alambagh, Lucknow.
Chief Commissioner of Railway Safety, Lucknow.

Managing Director/IRCON, C-4, District Centre, Saket, New Delhi.
Managing Director/RITES, RITES Bhawan, Sector-29, Gurgaon (Haryana) – 122001.
Managing Director/DMRC, Metro Bhawan, Barakhamba lane, New Delhi.
Managing Director/CONCOR, CONCOR Bhawan, C-3, Mathura Road, Opp. Apollo Hospital New Delhi-110016.
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., Ist Floor Jeeven Tara Building, Gate No.4, Parliament Street, New Delhi.
Managing Director/MRVC, Church Gate station Building 2nd Floor, Mumbai – 400020.
Managing Director/RLDA, IRCON Office Compound, Next to Safdarjang Rly. station, Motibagh-I, New Delhi.
Managing Director/Konkan Railway Corporation Ltd, Belapur Bhawan, Sector-11, CBD Belapur, Mumbai Pin - 400614.
Director/IRICEN, Pune-411001.
Director/IRIEEN, Post Box 233, Nasik Road - 422101 (Maharashtra).
Director/IRISET, Tarnaka Road, Secunderabad - 500017.
Director/IRIMEE, Jamalpur.
Director/IRITM, Vill. Kanausi, Hardoi, Manik Nagar, Lucknow.
Director General/National Academy of Indian Railways, Vadodara.
Genl. Secretaries, AIRF, NFIR, IRPOF, FROA, AIRPFA, DAI (Railways) Rail Bhawan, New Delhi.

Sub: Advance Correction Slip No.138 to the Indian Railways Permanent Way Manual.

Ministry of Railways (Railway Board) has decided that correction/addition as indicated in the enclosed Advance Correction Slip No.138 dated 25.08.2015, to relevant para of the IRPWM, be made.

Receipt of this letter may please be acknowledged.

25/8/15

(Pankaj Tyagi)
Director Civil Engg.(P),
Railway Board.

No. 2011/CE-II/CS/3 **New Delhi, dated 25.08.2015.**

Copy to : CRB, ME, MS, MM, MT, ML, 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.), Adv(L&A), Adv.(Bridges), Adv(Safety).

EDCE(P), EDTK(M), EDTK(MC), EDTK(P), EDCE(G), EDCE(B&S)-I, EDCE(B&S)-II, ED(L&A)-I, ED(L&A)-II, ED(L&A)-III, ED(Works), EDW(Plg.), ED/Infra./Civil, ED/PSU, ED/Proj.M, OSD(ME), EDV(E), EDF(X)-II, ED/PM.

DTK(MC), DTK(M), DTK(P), DCE(B&S), DCE(B&S)II, DCE(G), Dir.(Works) I & II, Dir. Works(Plg.), Dir.(L&A), DVE-I & DVE-II, Dir./TMS, Dir.(PSU), Dir.(WCS), Dir./Safety-IV, IPWE(I).

---

(35)

INDIAN RAILWAYS PERMANENT WAY MANUAL

ADVANCE CORRECTION SLIP No.138 DATED 25/08/2015

The existing sub para 1302 (2) (g) of Indian Railways Permanent Manual shall be replaced by the following:

Para 1302 (2) (g) - New bridges including road over and under bridges, foot over-bridges, strengthening, raising, reconstruction, dismantling or extension of existing bridges, addition or replacement of existing girders, including provision of temporary girders. Here, bridges shall include road over and under bridges, foot over bridges and subways affecting running lines.

*****

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2011/CE-II/PRA/1/17(CRS) New Delhi, Dated : 24.08.15.

The General Managers,
All Zonal Railways.

Sub: Train accidents due to infringement by road vehicles.
Ref: Rly. Bd's letter No. 2011/CE-II/PRA/1/17(CRS) dated, 16/12/11 & 27/8/13.

Railway Board vide letters referred above had communicated that the following recommendations of CRS/Western Circle shall be implemented and complied:

"Locations where road vehicles are plying/likely to ply closer to track should be protected by providing Rail barricading/fencing /walling/trenching as per site conditions and Speed Restriction (SR) should be imposed at locations, where Railway Administration is unable to maintain the structure erected to prevent trespass".

Recently, one accident has occurred on one of the Zonal Railways, where one road vehicle came to close to the track on road running parallel to track and dashed with train engine resulting in casualty and injury to train passengers.

It is desired that strict compliance of instructions already issued by Railway Board shall be ensured on Zonal Railways and compliance be reported.

The receipt of this letter may please be acknowledged.

27/8/15

(Satish Kumar Pandey)
Exec. Director Civil Engg. (Plg.)
Railway Board

28/08/15.

(37)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2015/CE-II/TK/Trackmen Report /Pt. New Delhi, dt. 14 /09/15

(16) → **Principal Chief Engineers**
All Zonal Railways

Sub: Provision of warning/Hooter system to prevent deaths of Track Maintainers etc. while on duty.

A Joint Committee of Executive Directors of Railway Board in association with the General Secretaries of Federations (AIRF & NFIR) was nominated by Board on the instruction of Hon'ble MR to resolve the issue of package and career progression of trackmen. The Committee submitted its report on 28.06.2011 which has been approved by Hon'ble MR

Para 11.2 (d) (ii) of the Report is as under:

"Warning System/Hooter may be developed and made part of each P.way Gang working in open line and similar other conditions".

On review, it has been observed that RDSO had earlier issued specification No. TM/SM/318 dt. 21.05.2008 for Gang/ worksite remote control hooter. The approved list of Manufacturers/suppliers of hooters as per this specification was also last issued by RDSO vide letter No. TM/SM/Track dated 14.01.2015.

Zonal Railways are advised to provide warning/hooter system in each gang to prevent deaths of track maintainer etc. while on duty. The action taken in this regard shall be advised on priority.

15/09

(Satish Kumar Pandey)
Exec. Director Civil Engg. (Plg.)
Railway Board

(38)

Assurance Matter

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No.2011/CE-II/Accidents/Policy

Dated 21.9.2015

The Principal Chief Engineer
All Zonal Railways.

CR, ER, ECR, ECoR, NR, NCR, NCR, NFR, NWR, SR, SCR, SER, SECR, SWR, WR, WCR,

(16)

Sub: Safety Drive for inspection and maintenance of Station Yards

During review, it has come to notice that the compliance of items recorded during the inspection of Points and Crossings and yard-lines are not ensured in time. This has been viewed very seriously by Board.

It has been decided that one month long special Safety Drive shall be launched for thorough inspection of Station Yards and ensuring complete removal of deficiencies noted during the inspection. During Safety Drive, special emphasis shall be given on the following issues:

i) Review of inspections done at the level of SSE/JE and joint inspection with SSE(Signal) for Points and Crossing. Status of compliance of observations recorded during such inspections;

ii) Check on the layouts in the Station Yard to ensure that turnouts/crossovers are as per standard drawings, special layouts are laid and maintained as per approved drawings;

iii) Condition of yard-lines, track on washable aprons, condition of rails and fastenings on yard-lines.

It shall be ensured that all Station Yards on your Railway are inspected at the Officers level and compliance is verified by them. Major Station Yards should be inspected at the level of DEN/Sr.DEN or JAG Officer of Headquarter.

It shall be ensured that during Drive, thorough inspection shall be completed within a week's time and compliance be ensured and verified urgently. The final report of the Drive shall be submitted to Railway Board by 26.10.2015 positively. This shall be treated as extremely urgent.

The receipt of the letter may please be acknowledged.

21/9/15

(Pankaj Tyagi)
Director Civil Engg. (Plg.)
Railway Board

22/09

Assurance Matter

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No.2015/CE-II/Meeting/3 New Delhi, dated 21.9.2015

The Principal Chief Engineers
All Zonal Railways
CR, ER ECR, ECoR NR, NCR, NER, NFR, NWR/SR, SCR, SER, SECR, SWR, WR, WCR,

Sub: Meeting with Sr. Section Engineer/P-Way (SSE/P-Way).

During Principal Chief Engineers' Conference, it was emphasized that proper structured meetings of SSE/P-Ways shall be done at the level of Principal Chief Engineer to appreciate the field problems in implementation of instructions, obtain technical suggestions from field front line staff about deficiencies and direct feed-back. The outcome of such meetings arranged by Zonal Railways has not been advised to Railway Board.

Board (ME) has directed that the meeting of SSE/P-Way at the level of PCEs must be completed within a month's time and feed-back in this regard shall be submitted to Railway Board. The feedback shall particularly include following issues:

(i) Summary of problems reported by SSE P-Ways in implementation of existing stipulations;
(ii) Summary of technical suggestions received during meeting, Railway's comments on these suggestions and Directives issued thereafter.
(iii) Innovative ideas proposed or implemented by SSE/P-Way in field, along with technical appreciation of such innovations.

The feed-back in this regard shall be submitted to Railway Board by 26.10.2015 positively.

Please acknowledge receipt of this letter.

21/9/15

(Pankaj Tyagi)
Director Civil Engg. (Plg.)
Railway Board

21.09.2015

S.S. NARAYANAN
Addl. Member(Civil Engg.)

सत्यमेव जयते

भारत सरकार
रेल मंत्रालय, (रेलवे बोर्ड)
रेल भवन, नई दिल्ली-110001
GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)
RAIL BHAVAN, NEW DELHI-110001

D.O. No.2015/CE-II/Accident/18

New Delhi, September 28, 2015

My dear Roy,

Sub: Safety Drive for inspection and maintenance of Station Yards.
Ref: Railway Board's letter of even number dated 21.09.2015.

.....

Please connect letter under reference wherein Railways have been directed to launch a month long safety drive for inspection and maintenance of Station Yards. I hope necessary plan of action for carrying out the inspection must have been put in place by now. Nevertheless, I would like to draw your attention to the importance attached to the safe maintenance of lines in Station Yards as the accidents over Points and Crossings have become one of the major contributing factors of derailments on Engineering account during the current year. Therefore, there is a need to sensitize all the Officers and Supervisors down the line on the need for diligent inspection of station yards including platform lines and timely follow up action on the deficiencies noticed thereon.

It is requested that a detailed report on the outcome of the safety drive conducted indicating the summary of deficiencies/shortcomings noticed and the follow up action thereon is submitted to the Board by 25th October, 2015 positively.

With best wishes,

Yours sincerely,

(S. S. Narayanan)

Shri Sanjive Roy
Principal Chief Engineer,
South Western Railway,
Hubli.

S.S. NARAYANAN
Addl. Member(Civil Engg.)

सत्यमेव जयते

रेल मंत्रालय, (रेलवे बोर्ड)
रेल भवन, नई दिल्ली-110001
GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)
RAIL BHAVAN, NEW DELHI-110001

41

D.O. No.2015/CE-II/Accident/18

New Delhi, September 28, 2015

My dear Pal,

Sub: Safety Drive for inspection and maintenance of Station Yards.
Ref: Railway Board's letter of even number dated 21.09.2015.

.....

Please connect letter under reference wherein Railways have been directed to launch a month long safety drive for inspection and maintenance of Station Yards. I hope necessary plan of action for carrying out the inspection must have been put in place by now. Nevertheless, I would like to draw your attention to the importance attached to the safe maintenance of lines in Station Yards as the accidents over Points and Crossings have become one of the major contributing factors of derailments on Engineering account during the current year. Therefore, there is a need to sensitize all the Officers and Supervisors down the line on the need for diligent inspection of station yards including platform lines and timely follow up action on the deficiencies noticed thereon.

It is requested that a detailed report on the outcome of the safety drive conducted indicating the summary of deficiencies/shortcomings noticed and the follow up action thereon is submitted to the Board by 25th October, 2015 positively.

With best wishes,

Yours sincerely,

(S. S. Narayanan)

Shri Ved Pal
Principal Chief Engineer,
South East Central Railway,
Bilaspur.

रेल मंत्रालय, (रेलवे बोर्ड)
रेल भवन, नई दिल्ली-110001
GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)
RAIL BHAVAN, NEW DELHI-110001

सत्यमेव जयते

S.S. NARAYANAN
Addl. Member(Civil Engg.)

D.O. No.2015/CE-II/Accident/18

New Delhi, September 28, 2015

My dear Meena,

Sub: Safety Drive for inspection and maintenance of Station Yards.
Ref: Railway Board's letter of even number dated 21.09.2015.

.....

Please connect letter under reference wherein Railways have been directed to launch a month long safety drive for inspection and maintenance of Station Yards. I hope necessary plan of action for carrying out the inspection must have been put in place by now. Nevertheless, I would like to draw your attention to the importance attached to the safe maintenance of lines in Station Yards as the accidents over Points and Crossings have become one of the major contributing factors of derailments on Engineering account during the current year. Therefore, there is a need to sensitize all the Officers and Supervisors down the line on the need for diligent inspection of station yards including platform lines and timely follow up action on the deficiencies noticed thereon.

It is requested that a detailed report on the outcome of the safety drive conducted indicating the summary of deficiencies/shortcomings noticed and the follow up action thereon is submitted to the Board by 25th October, 2015 positively.

With best wishes,

Yours sincerely,

(S. S. Narayanan)

Shri R.K. Meena
Principal Chief Engineer,
South Eastern Railway,
Kolkata.

रेल मंत्रालय, (रेलवे बोर्ड)
रेल भवन, नई दिल्ली-110001
GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)
RAIL BHAVAN, NEW DELHI-110001

सत्यमेव जयते

S.S. NARAYANAN
Addl. Member(Civil Engg.)

D.O. No.2015/CE-II/Accident/18

New Delhi, September 28, 2015

My dear Singh,

Sub: Safety Drive for inspection and maintenance of Station Yards.
Ref: Railway Board's letter of even number dated 21.09.2015.

.....

Please connect letter under reference wherein Railways have been directed to launch a month long safety drive for inspection and maintenance of Station Yards. I hope necessary plan of action for carrying out the inspection must have been put in place by now. Nevertheless, I would like to draw your attention to the importance attached to the safe maintenance of lines in Station Yards as the accidents over Points and Crossings have become one of the major contributing factors of derailments on Engineering account during the current year. Therefore, there is a need to sensitize all the Officers and Supervisors down the line on the need for diligent inspection of station yards including platform lines and timely follow up action on the deficiencies noticed thereon.

It is requested that a detailed report on the outcome of the safety drive conducted indicating the summary of deficiencies/shortcomings noticed and the follow up action thereon is submitted to the Board by 25th October, 2015 positively.

With best wishes,

Yours sincerely,

(S. S. Narayanan)

Shri S.N. Singh
Principal Chief Engineer,
South Central Railway,
Secunderabad.

S.S. NARAYANAN
Addl. Member(Civil Engg.)

सत्यमेव जयते

भारत सरकार
रेल मंत्रालय, (रेलवे बोर्ड)
रेल भवन, नई दिल्ली-110001
GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)
RAIL BHAVAN, NEW DELHI-110001

D.O. No.2015/CE-II/Accident/18

New Delhi, September 28, 2015

My dear Sanghi,

Sub: Safety Drive for inspection and maintenance of Station Yards.
Ref: Railway Board's letter of even number dated 21.09.2015.

.....

Please connect letter under reference wherein Railways have been directed to launch a month long safety drive for inspection and maintenance of Station Yards. I hope necessary plan of action for carrying out the inspection must have been put in place by now. Nevertheless, I would like to draw your attention to the importance attached to the safe maintenance of lines in Station Yards as the accidents over Points and Crossings have become one of the major contributing factors of derailments on Engineering account during the current year. Therefore, there is a need to sensitize all the Officers and Supervisors down the line on the need for diligent inspection of station yards including platform lines and timely follow up action on the deficiencies noticed thereon.

It is requested that a detailed report on the outcome of the safety drive conducted indicating the summary of deficiencies/shortcomings noticed and the follow up action thereon is submitted to the Board by 25th October, 2015 positively.

With best wishes,

Yours sincerely,

(S. S. Narayanan)

Shri Pradeep Kumar Sanghi
Principal Chief Engineer,
North Western Railway,
Jaipur.

रेल मंत्रालय, (रेलवे बोर्ड)
रेल भवन, नई दिल्ली-110001
GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)
RAIL BHAVAN, NEW DELHI-110001

सत्यमेव जयते

S.S. NARAYANAN
Addl. Member(Civil Engg.)

(45)

D.O. No.2015/CE-II/Accident/18

New Delhi, September 28, 2015

My dear Gupta,

Sub: Safety Drive for inspection and maintenance of Station Yards.
Ref: Railway Board's letter of even number dated 21.09.2015.

.....

Please connect letter under reference wherein Railways have been directed to launch a month long safety drive for inspection and maintenance of Station Yards. I hope necessary plan of action for carrying out the inspection must have been put in place by now. Nevertheless, I would like to draw your attention to the importance attached to the safe maintenance of lines in Station Yards as the accidents over Points and Crossings have become one of the major contributing factors of derailments on Engineering account during the current year. Therefore, there is a need to sensitize all the Officers and Supervisors down the line on the need for diligent inspection of station yards including platform lines and timely follow up action on the deficiencies noticed thereon.

It is requested that a detailed report on the outcome of the safety drive conducted indicating the summary of deficiencies/shortcomings noticed and the follow up action thereon is submitted to the Board by 25th October, 2015 positively.

With best wishes,

Yours sincerely,

(S. S. Narayanan)

Shri S.S. Gupta
Principal Chief Engineer,
Southern Railway,
Chennai.

भारत सरकार
रेल मंत्रालय, (रेलवे बोर्ड)
रेल भवन, नई दिल्ली-110001
GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)
RAIL BHAVAN, NEW DELHI-110001

S.S. NARAYANAN
Addl. Member(Civil Engg.)

सत्यमेव जयते

D.O. No.2015/CE-II/Accident/18

New Delhi, September 28, 2015

My dear Sondhi,

Sub: Safety Drive for inspection and maintenance of Station Yards.
Ref: Railway Board's letter of even number dated 21.09.2015.

.....

Please connect letter under reference wherein Railways have been directed to launch a month long safety drive for inspection and maintenance of Station Yards. I hope necessary plan of action for carrying out the inspection must have been put in place by now. Nevertheless, I would like to draw your attention to the importance attached to the safe maintenance of lines in Station Yards as the accidents over Points and Crossings have become one of the major contributing factors of derailments on Engineering account during the current year. Therefore, there is a need to sensitize all the Officers and Supervisors down the line on the need for diligent inspection of station yards including platform lines and timely follow up action on the deficiencies noticed thereon.

It is requested that a detailed report on the outcome of the safety drive conducted indicating the summary of deficiencies/shortcomings noticed and the follow up action thereon is submitted to the Board by 25th October, 2015 positively.

With best wishes,

Yours sincerely,

(S. S. Narayanan)

Shri J.S. Sondhi
Principal Chief Engineer,
West Central Railway,
Jabalpur.

S.S. NARAYANAN
Addl. Member(Civil Engg.)

सत्यमेव जयते

रेल मंत्रालय, (रेलवे बोर्ड)
रेल भवन, नई दिल्ली-110001
GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)
RAIL BHAVAN, NEW DELHI-110001

47

D.O. No.2015/CE-II/Accident/18

New Delhi, September 28, 2015

My dear Agrawal,

Sub: Safety Drive for inspection and maintenance of Station Yards.
Ref: Railway Board's letter of even number dated 21.09.2015.

.....

Please connect letter under reference wherein Railways have been directed to launch a month long safety drive for inspection and maintenance of Station Yards. I hope necessary plan of action for carrying out the inspection must have been put in place by now. Nevertheless, I would like to draw your attention to the importance attached to the safe maintenance of lines in Station Yards as the accidents over Points and Crossings have become one of the major contributing factors of derailments on Engineering account during the current year. Therefore, there is a need to sensitize all the Officers and Supervisors down the line on the need for diligent inspection of station yards including platform lines and timely follow up action on the deficiencies noticed thereon.

It is requested that a detailed report on the outcome of the safety drive conducted indicating the summary of deficiencies/shortcomings noticed and the follow up action thereon is submitted to the Board by 25th October, 2015 positively.

With best wishes,

Yours sincerely,

(S. S. Narayanan)

Shri S.N. Agrawal
Principal Chief Engineer,
Western Railway,
Mumbai.

(18)

Assurance Matter

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2006/CE-II/Safety/1 New Delhi, dt. 08/10/2015.

Principal Chief Engineers,
All Zonal Railways.

Sub: Winter precautions to prevent rail/weld failure-Safety of Track.

Winter will set in shortly in most parts of the country. It is hoped that sufficient measures have been taken to prevent Rail/Weld failures in coming winter and relevant instructions for ensuring winter precautions have been reiterated in field upto the lowest level. Some of the activities requiring specific attention are mentioned below:

I Examination & Lubrication of Rail Joints including bolt holes for Joggled Fish Plates should be completed as per schedule.

II Destressing of LWR/CWR shall be completed wherever due.

III LWR/CWR in RF/WF prone locations should be identified and measures like recoupment of missing fittings and de-stressing at lower temperature for winter season may be taken as per requirement.

IV All Arrangements for cold weather patrolling should be made as para 9.1.2(ii) of LWR Manual.

V A close watch on rail temperature should be kept and temperature record register should also be maintained by the SSE/P.Way. Cold Weather Patrolling must be introduced as per para 1.17/Annexure X B of LWR manual.

VI Duty hours of Keymen should be suitably changed so that failures, if any, can be detected in time.

VII Inspection of LWRs/CWRs & SEJs by SSE/P.Way as per para 8.1.5(i) of LWR Manual and attention carried out as found necessary.

VIII It should be ensured that there are no arrears of USFD testing and corrective action as per provisions of USFD manual is taken

IX Rails having corroded flange should be kept under special watch and suitably protected.

Feedback on action taken be apprised for information of Board.

8/10/15

(Satish Kumar Pandey)
Executive Director Civil Engg.(P)
Railway Board.

कृपया सभी रेलवे को जारी करें!
08.10.2015

Copy to : PPS/ME for kind information of ME.
: PPS/AMCE for kind information of AM(CE)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2015/CE-II/Geo-tech/1

New Delhi, dt. 08/10/2015.

Principal Chief Engineers,
All Zonal Railways.

Chief Administrative Officer/Cons.
All Zonal Railways

Sub: Setting up Geotechnical Engineering Lab in Open Line as well as in construction organization of Zonal Railways.
Ref: Railway Board's letter No. 2002/CE-II/MB/5 dated 20.07.2004.

Instructions for developing Geotechnical Lab in all the Zones and all Construction Projects were issued vide letter under reference. A review was done vide letter No. 2009/CE-I/Geo-Cell/B&S-II dt. 06.11.2009, wherein it was noted that Geotechnical Labs are either not set up on some Zonal Railways or labs are not functional. Recent interactions with Zonal Railways suggest that the conditions of the Geotechnical Labs are far from satisfactory.

You are, therefore, advised to examine the status of Geotechnical Labs available on your Railway and take immediate steps to revitalize the same and put the same to gainful use. It shall also be ensured that all requisite equipments as per RDSO Guidelines are available in the Geotechnical Labs.

In case, Geotechnical Lab is still not established on your Railway, immediate steps be taken for setting up the same.

Please acknowledge the receipt of this letter.

8/10/15

(S.S. Narayanan)
Addl. Member (Civil Engg.)
Railway Board.

9/10/15

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2011/CE-II/Safety Equipment

New Delhi, dt. 08/10/2015.

Principal Chief Engineers,
All Zonal Railways.

Chief Administrative Officer/Cons.
All Zonal Railways

Sub:Upkeep and maintenance of surveying instruments.

Many surveying instruments like Thedolite, Distomat and Dumpy levels are in the possession of the Sr. Supervisors. However, it has come to notice that among all these instruments only a handful. are in working condition. This is not a happy situation at all.

You are, therefore, advised to launch a drive to ascertain the condition of surveying instruments available on your Railway. All efforts should be made to have these equipments in working condition over the next one month.

It may also be ensured that at least each ADEN has a full complement of surveying instruments in his jurisdiction.

13/10/15

(S.S. Narayanan)
Addl. Member (Civil Engg.)
Railway Board.

(5.1)

Assurance Matter

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2015/CE-II/TK/Inspections

New Delhi, dt. 14/10/2015.

Principal Chief Engineers,
All Zonal Railways.

Sub: Last Vehicle Inspections by P-Way officials.

The Schedule of Inspection laid down for different P-Way officials in IRPWM and other instructions stipulate the last Vehicle inspection to be done at specified frequency. The last vehicle inspection are very effective means in judging the ride quality of track, identification of spots requiring attention, effectiveness of attention given to track etc. The alertness of Gateman, Patrolman etc can also be checked effectively during such inspections. As such, it is essential that the Officers/Supervisors carry out last vehicle inspections more frequently by fastest train in the section. Also frequent night inspection by last vehicle shall be done for checking alertness of staff.

This shall be reiterated to all P-Way officials/Officers. Monthly review shall be done at Divisional level for last vehicle inspections done by SSE/ADENs and at Headquarter level for inspections done by Sr. DENs and Headquarter officers. Summary of review shall be advised to Board.

(S.S. Narayanan)
Addl. Member (Civil Engg.)
Railway Board.

(52)

सत्यमेव जयते

S.S. Narayanan,
Additional Member
Civil Engg.

भारत सरकार
रेल मंत्रालय, (रेलवे बोर्ड)
नई दिल्ली-११० ००१
GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)
NEW DELHI-110001

D.O. No. 2014/TMS/AMS/1

Dt. 16.10.2015

My dear (GMs/All Indian Railways)

विषय/Sub: Mapping of Indian Railways' Asset and uploading on GIS-Portal.

संदर्भ/Ref: i) CE/TMS/NR's letter No.198-W/e-Gov/GIS/GPS dated 09.09.2015.
ii) Railway Board letter No.2014/LML-II/2/12 dated 16.04.2015.

As per the Budget Pronouncement made by Hon'ble MR, GIS/GPS mapping of various assets of Indian Railways (Land, Route, Track lines, Bridges, Level Crossings, Stations, SEJs, Other Track Features, Signals, OHE Masts, SP/SSP, Buildings etc.) has to be completed in the current year. All these assets are to be mapped and made possible to be viewed on Satellite and other Imageries. Requisite input has been taken from Survey of India and ISRO/NRSC in this regard.

2. However, GPS survey has to be done by Zonal Railways for domain asset data. This involves two types of survey.

2.1 On Track and Track Side Assets Survey: Survey of assets like Route, Track, Km Post, Bridges, Level Crossings, Points and crossing, SEJ, Station, Cabin, Signal, OHE Mast, Curve, Tunnel, Cutting, SP, SSP, etc., is the responsibility of CTE of Zonal Railway to get this done by each Division. This survey is basic survey and critical for further progress and development. For survey of On-Track & Track side assets, trolley mounted GPS enabled device called Route data File Preparation System (RDPS) is to be used. RDSO specification exists for the same. Zonal Railways were advised to procure this equipment in sufficient numbers, at least one per Division and carry out this survey work on priority. This has to be completed by 31.12.2015. However, progress in this area is not satisfactory and needs to be expedited.

53

2.2 Survey of Assets away from Track:

(i) For assets far away from track like Land (land away from track), Building and Structures, Sub-station, workshops, etc., it is the responsibility of CE/G of Zonal Railways to get this survey done. For this survey, hand held devices are to be used. CRIS will procure these devices and provide to Zonal Railways and PUs.

(ii) Railway Land holdings are to be collated and mapped on Indian Railway routes with facility to view on satellite and other imageries. For this purpose, it is needed to prepare (a) Land Plan in Autocad & (b) Offset Table as Excel file, using the authenticated (or otherwise) village land plans. These, along with scanned copy of Land plans are to be uploaded in Land Module of TMS. This is to be got done by CE/G of Zonal Railway.

(iii) For land along the track, no separate survey is to be done by hand held devices and will be covered using the survey done as per para 2.1 and para 2.2(ii).

PCEs of Zonal Railway have been informed vide Ref.-1 about importance of this work along with detailed methodology. Workshop of CE/G and Dy.CE/TMS of all Zonal Railways has already been conducted on 01.05.2015 along with demonstration of RDPS.

3. In view of Budget Pronouncement, it is necessary that above work is completed by 31.12.2015. It is therefore requested that this be monitored at your level and reviewed in weekly meetings being held with PHODs.

P.I. Bose
AKG
16.10.15

15/10/15

(S.S. Narayanan)

(GMs/All Indian Railways)

Copy to: N.O.O.

~~AM/Signal~~, AM/Telecom., AM/Electrical, AM/ME, AM/PU, Adviser/Land for information & necessary action.

2. MD/CRIS for information and necessary action in regard to para 2.2(i), with a request to expedite supply of hand held devices referred to in para 2.2.(i).

16.10.15

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

No.2011/CE-II/Accident/Policy

New Delhi, dt. .12.2015

Principal Chief Engineers/CAO(C)'s,
All Zonal Railways.

Sub: Derailment of Ballast trains/material wagons due to carelessness in loading/unloading on IR.

Ref : AM/CE's letter No.2014/CE-II/Accident/14 dated 11/06/14.

Derailment of ballast trains and material trains is a cause of concern for Indian Railways. Most of these derailments have been caused due to staff negligence, uneven/partial loading/unloading by the Engineering Staff.

In this connection, a cheek list prepared on the basis of instructions contained in IRPWM and G&SR for working of ballast trains were issued vide AM/CEs letter No. 2014/CE-II/Accident/14 dated 11/06/14 (copy enclosed). The Zonal Railways were advised to ensure that precautions contained in check list must be observed while working material trains.

The derailments of ballast train reported from Zonal Railways suggest that due care is still not been taken by staff while unloading.

You are, once again advised that the instructions issued vide letter under reference above may kindly be reiterated to all field officials of construction and open line organization, so that derailments of ballast trains/material trains due to staff carelessness can be avoided in future.

(Satish Kumar Pandey)
Executive Director, Civil Engg.(P)
Railway Board.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

(55)

No. 2014/CE-II/Accident/14

New Delhi, dated 11/06/14.

Principal Chief Engineers,
All Zonal Railways.

Sub: Derailment of Ballast DMTs.

Recently, one BOBYN Wagon derailed after unloading of ballast on SWR. The section remained closed for more than five hours. The ballast train was returning to the adjacent station after unloading of ballast. Prima facie cause of the derailment has been given as uneven discharge of ballast.

On inquiry, it was informed that the derailment took place on 6^0 curves. The complete unloading of the ballast from the derailed wagon was not ensured by the staff who supervised unloading of ballast. The doors on inside of the curve were jammed due to which there was no unloading on the inside of the curve from this wagon. During the run, the outer wheels of trolley got off-loaded and the trolley derailed. This is a case of avoidable derailment which happened due to carelessness of the staff accompanying the ballast train.

Accidents of ballast trains occur primarily due to the following three reasons:

(i) Obstruction on track with excessive unloading of ballast.
(ii) Jamming of flange way between the running rail and check rail at the location like Points & Crossings, L-Xing etc.
(iii) Partial unloading of wagons leading to uneven loading.

Derailment on account of above reasons can be avoided with the alertness of staff during and after unloading of ballast.

Board (ME) has taken a very serious view

Instructions on the working of material trains are covered in Chapter XII of IRPWM and Para 4.62, 4.63 & 4.64 of GR. A check list has been prepared on the basis of instructions contained in IRPWM and G&SR for working of material trains which is enclosed. The precautions contained in the check list must be observed while working material trains.

(V.K. Jain)
11.6.14

(55)

South Western Railway

Check List for working of Ballast Trains (BT):

For working of ballast trains, if should be ensured that :

1. The ballast train is accompanied by a qualified Engineering Official-in-charge, with valid Competency Certificate.

2. In case of ballast train working with contractors' man, contractor's supervisor is available with authorized photo identify card. Contractor's Supervisor and labour should be trained to work the ballast train.

   Assurance obtained from the Supervisor that he is well conversant with the rules & regulations pertaining to the working of BT.

3. The Official-in-charge has the details of exact location at which the ballast has to be unloaded, duly approved by SSE/P. Way or ADEN.

4. The supervisor is aware of the location where ballast is to be unloaded.

5. The hopper doors are in proper working order.

6. The wagons are loaded up to the correct level as per the marking given on the hopper wagons.

7. The rake has been examined by the TXR within the last 7 days.

8. The train is equipped with requisite brake power.

9. Minimum 12 to 15 labour are available in the BT.

10. Only one hopper is unloaded at a time when train moves at walking speed.

11. The Official-in-charge should walk on the side and instruct the labourers as to when to open or close the hopper doors (so as to avoid uneven unloading of the ballast)

12. The ballast is not unloaded on and near LCs, points & crossings and girder bridges.

13. BT should not be stopped while unloading and if it is stopped due to any reason, the same should not be moved without ensuring the clearance of ballast from track under the wheels.

14. The Official-in-charge will see that ballast is not left between check-rail & running rail in LC, sharp curves and pints & crossings zone; and guard-rails & running-rails on ballast deck bridges.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2015/CE-II/TK/14 New Delhi, dt. 30/12/2015.

General Managers,
All Zonal Railways.

Sub:Safety at Work Sites.

Instructions on ensuring safety at work sites have been issued and reiterated from time to time by Board. However, accidents including derailments still take place at work sites, which is a cause of serious concern.

Para No. 826 of Chapter VII of the IRPWM , 1986 stipulates that any work in the proximity of running of track shall be started by contractor only in the presence of Railway supervisor or his representative and contractor's supervisor at site along with other procedures and rules to ensure safety. Further, instructions have been issued from Board vide letter No. 2000/CE-II/PRA/12 dated 26.11.12 to provide sturdy fencing to forewarn the road vehicle drivers working in vicinity of railway track. This was reiterated from Railway Board vide letter No. 2011/CE-II/PRA/1/17(CRS) dated 27.08.15.

It is requested that suitable mechanism may please be put in place for ensuring strict compliance of instructions already issued by Railway Board. Instructions may also be issued to inspect all work sites on the Railways with a view to check the adequacy of protection measures deployed at site and a report indicating the deficiencies noticed and action taken thereon be sent to Board by 15.01.2016. Staff working at sites needs to be sensitised not to adopt any short cut method leading to unsafe conditions.

(S.S. Narayanan)
Addl. Member (Civil Engg.)
Railway Board.

भारत सरकार (GOVERNMENT OF INDIA)

रेल मंत्रालय (MINISTRY OF RAILWAYS)

रेलवे बोर्ड (RAILWAY BOARD)

No.2012/CE-II/TK/Rail Renewal New Delhi, Dt. 14.01.2016

Principal Chief Engineers
All Zonal Railways.

Chief Administrative Officers/Con
All Zonal Railways.

Sub: Rail Section for Track Renewals, Doublings, New Lines and Gauge conversion Projects

Ref: (i) Railway Board's letter no. 2007/CE-II/TS/6/Pt-II dated 16.05.2012.
(ii) Railway Board's letter no. 2013/W1/Spec. of GC/RNY-MZS dated 01.07.2013.

1.0 The Para 248(2) (a) of IRPWM as amended vide Advance correction slip no. 129 dated 28.06.2012 provides that for Gauge conversion and New line projects with dead end having expected traffic of less than 5 GMT and not likely to have CC+6+2t freight trains in the foreseeable future, 52 kg, 90UTS rails can be used.

Through letter under reference (ii) above, it was advised that for Gauge conversion projects, the Rail sections shall be as per position of Railway Board's letter under reference (i) above i.e. 60kg rails are to be provided on Gauge Conversion projects connected to main line at both ends and with projected traffic of more than 5GMT. On other projects, 52 kg (SH) rails shall be provided.

2.0 The issue of using 52 kg rails on new line projects and GC projects has been comprehensively reviewed at Railway Board. It has been decided that Para 248 (2) (a) of IRPWM shall be revised as under:-

'248 (2) (a) Broad Gauge –

Track renewals, Doubling, New lines, and Gauge Conversions -60kg rails with minimum 90UTS.

Note:- For Gauge Conversion works & new line works having projected traffic of less than 5GMT, 60kg(SH) rails, if available with Railways, can be used depending upon future projected extension of lines etc.'

The existing provisions of IRPWM regarding rail sections on loop lines and siding will remain unchanged.

3.0 In view of above changes in IRPWM, all sanctioned works shall be reviewed keeping following action plan in view:

(i) All new line and Gauge Conversion works, which are targeted for completion in 2015-16 or early part of 2016-17 and where 52 kg rails have already been supplied, shall be completed with 52 kg rails.

(ii) For other works of new line and Gauge Conversion, only 60 kg rails will be used. Railway will arrange necessary revision to estimate, if required. The projection of requirement of rails for such projects with 60 kg rails will be done by Railways.

(iii) No cases for dispensation of Railway Board for use of new 52 kg rails will be considered in Board.

This is issued with the approval of Board (ME).

14/1/2016

(Satish Kumar Pandey)
Executive Director Civil Engg.(P)
Railway Board

Copy:-

ED/Works/Railway Board for information and necessary action.

(60)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2015/CE-II/TK/LWR

New Delhi, dt. //01/2016

Principal Chief Engineer
All Zonal Railways

Sub: Destressing of LWR using tensors.

Para 6.4 of "Manual of Instructions on Long Welded Rails" stipulate the situations for De-stressing maintenance. The para indicates that abnormal behaviour of LWR/CWR when ever gets manifested, Destressing be undertaken as per procedure laid down in para 5.7. The Para 5.7.2 and 5.7.3 of Manual gives the sequence of operations and destressing operations of LWR with the use of Rail Tensors. Thus, it is incumbent on the part of field official to ensure that destressing of LWR is done invariably using Rail Tensors.

However, Para 5.7.4 of LWR Manual provides that in case rail temperature at the time of destressing is within the range specified in Para 1.11, detailed procedure as given in Annexure-VIII (Destressing operation of LWRs/CWRs panels without use of Rail Tensors) may be adopted.

It is noticed that rather using the methodology of destressing with Rail Tensors, field staff generally wait for the rail temperature to come within the range as specified in Para 1.11 to carry our destressing without Tensor. The destressing temperature may be available only for very brief period and thus desired destressing of LWR is not achieved properly without rail tensors. As such, destressing without Rail Tensors is not considered effective maintenance operation.

It has, therefore, been decided that the normal maintenance destressing of the LWR as prescribed in para 6.4 of LWR manual and after Through Rail Renewal works shall invariably be undertaken with the use of tensors as per Para 5.7 and para 5.7.4 shall not be applicable in such cases.

Strict compliance of the above instructions shall be ensured.

(Satish Kumar Pandey)
Exec. Dir. Civil Engg. (Plg.)
Railway Board

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2015/CE-II/CRS/4

New Delhi, Dt. 08.02.2016

The General Manager,
All Zonal Railways.

Chairman and Managing Director
Konkan Railway Corp. Ltd.,
CBD Belapur Bhawan,
Navi Mumbai 400-614.

Sub: Survey of roads running parallel to track on top of cuttings, intermediates berms of cuttings, approaches of ROB in cuttings.

An accident involving Express train occurred on one of the Zonal Railways due to falling down of road vehicle from road running parallel to track on edge of cutting.

It is advised that Railways shall carry out survey of roads running parallel to track on top of cuttings, intermediates berms of cuttings, approaches of ROB in cuttings and shall provide well designed appropriate type of barricading/protective works along the road on track side for appropriate length, so that possibility of road vehicle falling on track from cutting is eliminated. The survey may also cover habitation existing on top of cutting, if any, along with planning for provision of adequate measures to prevent any vehicle/machinery rolling down from top on to the track.

The receipt of this letter may please be acknowledged and compliance reported.

(Satish Kumar Pandey)
Exe. Director Civil Engg.(P)
Railway Board

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

****

No. 2015/CE-II/CS/1 New Delhi, dated 08.02.2016

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 CAO/Const. All Indian Railways.
FA & CAO, All Indian Railways.
The General Managers (Engg.) – ICF/Chennai, RCF/Kapurthla, DLW/Varanasi, CLW/Chittranjan, W&AP/Yelahanka, Bangalore & DMW/Patiala.

The Director General (Track), RDSO/Alambagh, Lucknow.
Chief Commissioner of Railway Safety, Lucknow.

Managing Director/IRCON, C-4, District Centre, Saket, New Delhi.
Managing Director/RITES, RITES Bhawan, Sector-29, Gurgaon (Haryana) – 122001.
Managing Director/DMRC, Metro Bhawan, Barakhamba lane, New Delhi.
Managing Director/CONCOR, CONCOR Bhawan, C-3, Mathura Road, Opp. Apollo Hospital New Delhi-110016.
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., Ist Floor Jeeven Tara Building, Gate No.4, Parliament Street, New Delhi.
Managing Director/MRVC, Church Gate station Building 2nd Floor, Mumbai – 400020.
Managing Director/RLDA, IRCON Office Compound, Next to Safdarjang Rly. station, Motibagh-I, New Delhi.
Managing Director/Konkan Railway Corporation Ltd, Belapur Bhawan, Sector-11, CBD Belapur, Mumbai Pin - 400614.
Director/IRICEN, Pune-411001.
Director/IRIEEN, Post Box 233, Nasik Road - 422101 (Maharashtra).
Director/IRISET, Tarnaka Road, Secunderabad - 500017.
Director/IRIMEE, Jamalpur.
Director/IRITM, Vill. Kanausi, Hardoi, Manik Nagar, Lucknow.
Director General/National Academy of Indian Railways, Vadodara.
Genl. Secretaries, AIRF, NFIR, IRPOF, FROA, AIRPFA, DAI (Railways) Rail Bhawan, New Delhi.

Sub: Advance Correction Slip No.139 to the Indian Railways Permanent Way Manual.

Ministry of Railways (Railway Board) has decided that correction/addition as indicated in the enclosed Advance Correction Slip No.139 dated 08.02.2016, to relevant para of the IRPWM, be made.

Receipt of this letter may please be acknowledged.

(Pankaj Tyagi)
Director Civil Engg.(P),
Railway Board.

63

1.0 The new para 607(4) shall be added to Indian Railways Permanent Way Manual given as under:-

Para 607(4) - For maintenance of track at locations where speeds are to be reduced due to work at work sites or in yard lines where speed potential is generally low, following track parameters for guidance of field officials are stipulated:

Speed Band (in kmps)	Peak value of UN in mm at 3.6 m chord	Peak value of Twist in mm at 3.6 chord	Permissible Gauge range
45	22	22	-10 to +27 mm
30	24	25	-10 to +27 mm
15	33	30	-12 to +27 mm

2.0 The existing Para 248 (2) (a) of Indian Railways Permanent Way Manual shall be replaced with the following:-

Para 248 (2) (a) Broad Gauge – Track Renewals, Doubling, New Lines and Gauge Conversions -60kg rails with minimum 90UTS.

Note: For Gauge Conversion works & new line works having projected traffic of less than 5GMT, 60kg (SH) rails, if available with Railways, can be used depending upon future projected extension of lines etc.

Loop Lines:

60 kg (SH) or 52 kg (SH) should be used. New rails may be used on loop lines of Group A, B & C routes with prior approval of Board.

Private and other sidings:

(i) Sidings taking off from DFC or feeder routes to DFC or 25t axle load routes.	60 kg
(ii) Sidings other than (i) above with permissible speed up to 50 kmph.	52kg (SH) or 52 kg (IU)
(iii) Sidings other than (i) above with permissible speed more than 50 kmph	60 kg

3.0 The existing Para 910 (1) (j) of Indian Railways Permanent Way Manual shall be replaced with the following:-

Para 910. Equipment At Level Crossings - (1) (j) : 1 canister for muster sheet (for Engineering gates only).

***

(64)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2009/CE-II/Accident/Policy

New Delhi, dt. 09/02/2016

General Manager,
All Zonal Railways.

Sub: Prevention of Derailment of container flat wagons.

The cases of derailments of container flats occurred in different yards, while negotiating reverse curves due to multiple crossovers/turnouts, longer length of crossovers etc., have been reported by Zonal Railways. In majority of cases, inability of these wagons to negotiate reverse curves due to peculiar yard layout has been indicated as cause for derailment. The Container Flats normally move in 5 wagons Consist, in which rigid coupling in the form of slack free draw bar coupler are provided at the internal end of the end flats and at both ends of the middle 3 container flats. The rigid coupling (more rigid than normal CBC coupling) in a Consist of 5 flats has a tendency to remain straight. Hence, the wagons naturally exert significant lateral force at the wheel flange level while negotiating the cross-overs/series of turnouts while entering/exiting the yard.

The negotiability of these Consists over such loops and ladder type locations is to be assessed afresh by RDSO. Till such time the studies are completed, it has been decided that **operation of container wagon on second and subsequent loops may be restricted.**

Zonal Railways shall check the layout of yards in their territory and fix the routes for movement/stabling of BLC/BCLC wagons in such a way that negotiation of multiple crossovers leading to formation of reverse curves is avoided.

The negotiation of multiple crossovers/reverse curves by EUR rakes loaded with 20 rail panels may also lead to unsafe conditions on account of rigidity imparted by loaded 20 rail welded panels. Similar action shall be taken for these rakes also.

The exercise shall be completed by 15.03.2016 and routes for movement of such rakes (BLC/BCLC and loaded EUR rakes) shall be fixed to prevent any chance of derailment. Such restriction should be notified in station working rule of relevant station and working Time Table. These restrictions should also be given wide publicity through crew lobby, traffic control etc.

This is issued with the approval of Board (ME).

(Satish Kumar Pandey)
Exec. Dir. Civil Engg. (Plg.)
Railway Board

Copy to: DG/RDSO

(65)

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

No. 2016/CE-II/TK/1 New Delhi, dt.24.02.2016.

Principal Chief Engineers,
All Zonal Railways (except Northern Railway)

Sub: Intelligent field device for Continuous Rail temperature (CRT) measurement devices.

Para 2.2.1 of "Manual of Instructions for Long Welded Rails" requires continuous measurement of rail temperature at 8-10 stations nominated by each Zonal Railway in a manner to give representative sample of temperature variations. The data shall be analysed to decide mean temperature (tm) and time periods for maintenance of track, destressing operations, etc.

At present CRTs are installed at various locations on Indian Railways, which measures rail temperature and provide printout. The present process being an offline process requires high level of document management.

Northern Railway has installed Intelligent Field Devices (IFD) and interface with existing CRT devices. The system provides connectivity of existing temperature monitoring station to central server via an IFD. The server can simultaneously receive data from all the locations at central place and analysis can be done from anywhere via web interface. The feed is also given into Railways IT Application viz. Track Management System (TMS), etc., as per defined frequency. Alerts and daily reports can be generated based on requirements.

The trials of system have been found successful on Northern Railway. Specifications for the same, framed by Northern Railway based on this successful trials, are enclosed.

It has been decided that Chief Track Engineer of Zonal Railways will identify locations as per Para 2.2.1 of LWR Manual where CRTs have already been installed and take action for installing Intelligent Field Devices (IFD) at these identified locations by 30.04.2016 positively.

DA: As above.

(Satish Kumar Pandey)
Exec. Director Civil Engg.(P)
Railway Board

उत्तर रेलवे/NORTHERN RAILWAY

प्रधान कार्यालय/Headquarter Office,
बड़ौदा हाउस/Baroda House,
नई दिल्ली/New Delhi.
दूरभाष/Phone : 011-23073257

सं०/No. 198-W/e-Gov/TMS/Development/Pt-I

दिनाँक/Date: 21.05.2015

उत्तर रेलवे प्रधान कार्यालय
प्रेषित
21 MAY 2015
बड़ौदा हाउस, नई दिल्ली

Additional Member (Civil Engg.),
Railway Board,
Rail Bhavan,
New Delhi-110001

विषय/Sub: Intelligent Field Device for Continuous Rail Temperature (CRT) measurement devices

On Indian Railways rail temperature, at present, is being measured by manual thermometer and by Continuous Rail Temperature (CRT) measurement devices. At present CRTs are installed at various locations on Indian Railways. The existing CRT system measures rail temperature and provide printout and soft file. Subsequently the operator manually enters the hourly temperature data in TMS. The present process being an offline process requires high level of document management.

It was planned to install Intelligent Field Devices (IFD) and interface with existing CRT devices. The proposed solution provides connectivity of existing temperature monitoring station to central server via an IFD. The server can simultaneously receive data from all the locations at central place and analysis can be done from anywhere via web interface. The feed is also given into Railways IT Applications viz. Track Management System (TMS), etc., as per defined frequency. Alerts and daily reports can be generated based on requirements.

One such device has already been installed in unit of SSE/PWay/NDLS in Delhi Division. Specifications have been framed as per this successful trial and are attached for your kind information and for circulation on Indian Railways.

संलग्न/Encl.: As above

21/5/2015

(B.P.Awasthi)
Chief Engineer/TMS

Intelligent Web Enablement of Continuous Rail Temperature Measurement System (CRT)

1.0 Definitions and Abbreviations

CRT : Continuous Rail Temperature Measurement Device
IFD : Intelligent Field Device
TMS : Track Management System
SCADA : Supervisory Control and Data Acquisition

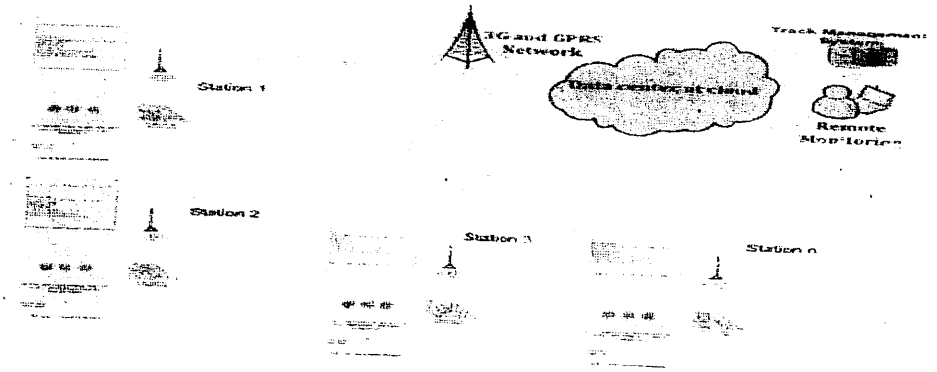
2.0 General

2.1 The specifications given below are meant to broadly bring out the technical and performance requirements of Intelligent Web Enablement of CRT devices.

2.2 Continuous Rail Temperature (CRT) is used by Indian Railways to measure/monitor rail temperature. Currently CRT monitoring system is installed at various locations in Indian Railways. The existing CRT system has a Temperature sensor with Table Top unit with its power supply and printer. The current system is operator dependent and wherein the operator manually observes the temperature reading, takes a printout consisting of hourly reading of rail temperature with highest and lowest temperature of the day. The present process being an offline process requires high level of document management, data being manually uploaded in Railways IT Applications viz. Track Management System (TMS), etc., as well as requires offline correlation and review of data of various stations.

3.0 Proposed Deployment Architecture

It is planned to install Intelligent Field Devices (IFD) and interface with existing CRT devices. The proposed solution provides connectivity of existing temperature monitoring station to central server via an IFD. The server can simultaneously receive data from all the locations at central place and analysis can be done from anywhere via web interface. The alerts and daily reports can be generated based on requirements. The input has also to be given into Railways IT Applications viz. Track Management System (TMS), etc., as per defined frequency.



4.0 Components of System

4.1 Continuous Rail Temperature Measurement Device (CRT) – These are already available on Indian Railways for measurement of Rail Temperature.

4.2 Intelligent Field Device (IFD) – It establishes communication channel between CRT and Central Server. It collects Rail Temperature data from CRT and sends to Central Server. It also takes commands from Central Server.

4.3 Central Server for communication between IFD and Central Server as well as between Central Server and Track Management System (TMS) and other monitoring & reporting functions.

4.4 Integration of Central Server with TMS

5.0 Service Conditions

5.1	Ambient Temperature	$(-)10^0$ C to $(+)55^0$ C
5.2	Rail Temperature	$(-)10^0$ C to $(+)65^0$ C
5.3	Humidity	5% to 95% non-condensing
5.4	Atmospheric Condition	Dusty, Foggy
5.5	Rainfall	Fairly Heavy

6.0 General System Requirements

Intelligent Field Devices (IFD) used with CRT should be single integrated unit with Sensing, Communication & Power Supply and should have following features:

6.1 IFD should have GPRS/3G/4G capability to establish communication channel with Central Server.

6.2 IFDs shall automatically connect itself to the Central Server, set up a unique communication channel for individual device and maintain continuous connection for sending and receiving the data over its unique communication channel. The IFD shall automatically publish the information to the central server, and subscribe to Central Server for control commands, provisioning commands etc from the Central server. Central Server shall never poll any information from field devices and all field devices shall always remain connected to the central server and publish information at same time.

6.3 Besides having the unique communication channel for each IFD, the system should have Bi-directional communication for Monitoring, Instant control commands etc between IFD and Central Server such that IFD to use regular GPRS facility of any Cellular Service Provider which generally employ either Dynamic-IP policy or Private-IP-With-Proxy policy. This bi-directional communication shall not be dependent on any static IP for IFDs or VPN connections. The details of current methodology used for bi-directional communication between IFDs and Central server for monitoring and control should be provided.

6.4 The web based application software and services shall be hosted at a minimum of Tier III level data centre in India by the vendor as part of work and the Railways shall have web browser interface based access to the application. The Web Interface should be on secured layer using https protocol based on 128-bit SSL encryption.

The software database should be in RDBMS platform with RAID based Storage architecture. Vendor has to provide a certificate that the servers are hosted at a minimum of Tier-III level data center.

6.5 The web based application software and services should have following features:

a) Able to be accessed from a simple Internet browser from anywhere and to be available 24x7 over web.

b) Should have reports with Graphical and Tabular presentation of data and shall provide multiple layers of reports, comparison reports and graphs for data analysis for – Sensor Parameters as well as Derived Parameters. There should be a facility to export data and graphs into Excel and PDF.

c) Should facilitate user selectable date and time range for viewing Daily / Weekly / Monthly / reports.

d) Should provide messages Alerts and Alarms for user-defined threshold crossing of temperature via SMS and/or Email as per requirement. Bi-Directional SMS sending/receiving by the user should strictly be through a central server and not through IFD.

e) User should be able to monitor, as well as control based on time or temperature (as applicable) from remote website. The rules and threshold for levels should be able to be defined from remote location.

6.6 The communication between the IFDs and Central Server Software shall happen on Message Queuing Publish Subscribe mechanism based telemetry transport protocol. The protocol should have data acknowledge features, and in case data received acknowledge message is not received from Central Server, there shall be retry mechanism in IFD. Further, the protocol should have PING with acknowledge feature to provide constant and continuous connection.

6.7 Also, there should be message queuing technology (MQ) based data exchange between central server and Railways IT Applications viz. TMS etc.

6.8 In case of disconnection, the status shall be updated at the server within 30 seconds with the time stamp.

7.0 Intelligent Field Device (iFD) hardware Specifications/Features

Intelligent Field Device should have following specifications/features:

7.1 An IFD shall be of **"SINGLE INTEGRATED UNIT"** consisting of following:

a) 32 Bit Remotely Configurable Microcontroller Platform with speed up to72MHz.

b) Power Supply –Single phase with battery back up and inbuilt charging

c) On-board Real Time clock

d) RS232 Serial port for connection to existing CRT system.

e) Inbuilt communication modem with 3G GPRS data communication facility.

7.2 IFDs shall communicate on WAN technologies such as 3G and GPRS as a primary source using assured data delivery protocol over TCP/IP. Intelligent IFD should have inbuilt GSM/GPRS Modem with following specifications:-

a) Plugin modules for direct interfacing with microcontrollers
b) Should have connectors for external magnetic antenna
c) There should not be any requirement of separate Power Supply, and Modem should work on same power supply as used for IFD unit.

7.3 IFDs are to be connected to existing CRT monitoring system on RS232/USB port as available on CRT and shall read and communicate temperature data to central server every 15 minutes. This time should be configurable from remote location.

7.4 IFDs shall have Local Data Storage in case of intermittent communication failures. Each IFD will have internal memory up to 4MB (expandable up to 8 Mb) to store the data in case of interruption 3G and GPRS communication channel.

7.5 LEDs for IFD health and diagnostics.

7.6 The Application logic shall be programmed at the web interface using Rule Engine and IFD unit shall be remotely updated with the application logic via Over The Air Provisioning interface.

7.7 IFD should be capable of inherent local intelligence as following:

a) Inbuilt device rule engine for executing the sequences and conditions configured via web interface configuration. Special engineering skills, programming skill shall not be required to edit and change the rules.
b) Apart from field IO, unit shall have timers, registers, and flag to add special rules as per field conditions.
c) Perform regular operations of monitoring, Sequential operation and communication with data center.
d) Accept the commands from data center when on battery backup also.
e) Automatic time synchronization with server.
f) On Demand Device Reading
g) Time stamping of data stored or sent by an IFD.
h) Device shall have inbuilt device diagnostics and shall transmit the diagnostic data to server in case of failure.
i) Device shall log the power supply (mains) failure, battery health parameters with timestamp.
j) Device shall maintain the continuous connection with the server and check the health of connection with the help of regular application level ping messages.

7.8 Each IFD will have battery backup of 8 hours minimum in order for Intelligent Field Device to communicate with data server in case of power failure. IFD should send Power Fail and Power Restoration alerts to server and an IFD should operate on battery power mode during this [illegible]

7.9 All electronic component used in IFD shall be lead free.

8.0 Central Server Application Software Specifications:

8.1 System should be built on Service Oriented Architecture with capability to integrate with third party systems like existing / future enterprise systems using open standards for receiving as well as sending the data.

8.2 The web based application software and services shall provide ready to use as well as customized Reports, Integration with existing SCADA, Integration with Engineering systems, TMS, Unified Dash Boards and Rule Engines etc.

8.3 Should provide role-based access of its services and various reports to different personnel from operator to top management.

8.4 Should have multiple layers of security in the system for safe operation. This means that there should be a separate login and viewing password and a separate password for control of equipments (as applicable).

8.5 Should have following physical hardware and software layers that are vertically and horizontally scalable:

a) Data Acquisition Layer working on Publish / Subscribe assured delivery mechanism
b) Application Layer for processing data, generating web reports, executing application rules and schedules etc.
c) Data Historian with RAID based storage architecture.
d) Web Server to provide Business Reports and Historical data access to web browser clients

9.0 Integration of Central Server with TMS

The data exchange between IFD central server and Railways IT Application viz. TMS etc. should be on message queuing technology with following features:

9.1 Data Acquisition Layer should work on open source MQ based secured and encrypted Publish / Subscribe assured delivery mechanism.

a) The publish/subscribe message pattern provides one-to-many message distribution and decoupling of applications.
b) This messaging transport is to be agnostic to the content of the payload.
c) This uses basic TCP/IP tc provide network connectivity.

9.2 Data acquisition layer must be platform independent and able to run on Linux or windows etc. operating system and should be developed in java (jdk6).

9.3 Data of various devices should be published from Central Server to TMS server as per periodicity specified by Railways.

9.4 Data publish time interval should be configurable.

9.5 In case of any communication failure or downtime at Central Server or TMS server, there shall not be any loss of data and there should not be any requirement of separate database sync application. Application should have a feature Connection / Disconnection between the servers shall be recorded with timestamps.

9.6 The IFD-Central Server format shall comply with TMS application requirements.

9.7 The data acquisition layer should have the flexibility of adding other multiple devices installed at various other applications of Indian Railways.

9.8 The data acquisition layer shall comply with firewall policy of TMS system.

9.9 64 bit data Encryption with private and public key wherein the private key remains with TMS system

9.10 Data Exchange Format between Cloud and TMS System:

App Id	DECIMAL(2)	1 – CRT
Role Id	VARCHAR(6)	Fix Length of 6 Characters
Station Code	VARCHAR(5)	Variable Length of 1-5 Characters
Date	VARCHAR(10) (DD/MM/YYYY)	Fix Length of 10 Characters
Time (24 hour format)	VARCHAR(8) (HH:MM:SS)	Fix Length of 8 Characters
Temperature (°C)	DECIMAL(5,2)	Negative value is possible
Node ID	-	Node ID of equipment. To be obtained by Cloud Vendor
Data Exchange Frequency	-	Configurable
Data Separators	-	~

******

(73)

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

No. 2014/CE-II/Genl/PNM New Delhi, dated 22.03.2016

The Principal Chief Engineers
All Zonal Railways
CR, ER, ECR, ECoR, NR, NCR, NER, NFR,
NWR, SR, SCR, SER, SECR, SWR, WR, WCR

Sub: Equipments of Keyman (Para 169 of IRPWM)

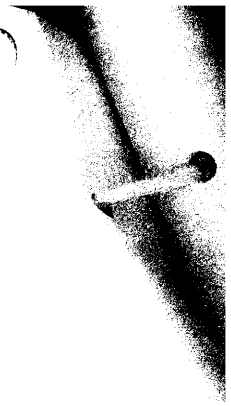
As per Para 169 of IRPWM, the keyman shall carry with him on his rounds two red flags and green flag, ten detonators, a flangeway gauge if required, for unmanned level crossings, a keying and spiking hammer, a fish bolt spanner, and two fish bolts, spare fittings and a rail closure of 30mm size. For the work of greasing of elastic rail clips wherever applicable, keyman shall carry a wire brush, emery paper, a duster and grease.

With the technological advancement in the field of metallurgy, it is incumbent that the equipments being carried by Keyman are light in weight without affecting the basic functionality of equipment. Also, Standard tool kit is made available to Keyman to carry these equipments with least fatigue. Moreover, with the existence of PSC sleepers on almost all BG routes, Keyman has to invariably carry the equipments required for greasing of PSC sleepers.

Western Railway has developed fish bolt spanner using alloy of low carbon steel, chromium and vanadium. The weight of this spanner is around 1.25 kg, thereby reduction in 50% weight. Western Railway has also designed Keyman tool bag. The bag has been designed in such a way that all the equipment can be housed in proper pockets. This bag is designed to carry weight of the above mentioned equipments except Keying hammer. The specifications of spanner and tool kit is enclosed.

To standardize the arrangement, revision of list of equipments to be carried by Keyman is required. The proposed revised list of equipments is as below :

(i)	Red Flag	- 2 nos.
(ii)	Green Flag	- 1 no.
(iii)	Detonator	-1 case having 10 detonators
(iv)	Check Rail clearance gauge	- 1 no.
(v)	Keying Hammer	-1 no.
(vi)	Alloy Spanner D/E	-1 no.
(vii)	Spanner Tubular	- 1 no.
(viii)	Fish bolt	-2 no.
(ix)	Additional ERC and Liners	-2 nos.
(x)	Rail closure	-1 no.
(xi)	Tapered Gauge	-1 no.
(xii)	Tapered Pin	-1 no.



(a)	Magnifying Glass	-1 no.
(b)	Plain mirror	-1 no.
(c)	Wire brush	-1 no.
(d)	Emiry Paper	
(e)	Jute and duster	

(xiv) Keyman Diary

You are requested to submit suggestions on the proposed list of equipments, spanner and keyman tool kit to standardize equipments.

DA- As above

02/03/16

(Pankaj Tyagi)
Director/Civil Engg.(Plg)
Railway Board

Modified light weight Keyman spanner

The conventional spanners used by Keymen and Gangmen found heavy in weight ranging from 2.4 Kg to 3.0 Kg. The shape of jaw was also creating problem in access of spanner in some congested locations such as stud bolts in Stock rails/slide chair and bolts behind heel of crossing.

- As per directive of Railway Board for reduction in weight of Keyman kit, Western Railway have conducted trials for developing light weight spanners for various combinations of shapes and metallurgical composition.

- As a result we have developed a modified light weight double ended spanner for use of Keymen and P-way gangs.

- The modified double ended light weight spanner is made of alloy of low carbon steel, Chromium and vanadium, having weight 1.25 Kg i.e. half of the conventional spanner.

- In addition the dimensions of limbs of jaw holding nut/bolt are also less which has improved the accessibility of spanner into congested locations.

- The comparison between modified light weight spanner and existing spanner is as under:

Sr. No.	Item	New light weight Special spanner	Old Spanner
1	Type	Double ended.	Double ended.
2	Weight	Light weighted App. 1250 gm.	App. Weight 2400 to 3000 gm.
3	Length	680 mm	680 mm to 760 mm
4	Hardness	Very high App. 380-400 BHN	Very less and during service size and shape of spanner gets changed due to wear and tear.
5	Material	Alloy of low carbon steel, Chromium and Vanadium.	Mild steel
6	Advantages	1). It is easy to carry as well as to operate due to light weight.	1). Handling is difficult due to heavy weight
		2). Size of spanner (Grip of spanner on the bolt/nut) do not become loose in service due to wear and tear of spanner as spanner having high hardness.	2). Size of spanner (Grip of spanner to the bolt/nut) become loose in service due to deformity on account of wear and tear of spanner as spanner having very low hardness.
		3). Being thin in size it has improved access to congested locations like stud bolts and Nut/bolts behind heel of crossing.	3) Being thick limbs of Jaw it is not easily accessible to congested locations like stud bolts and

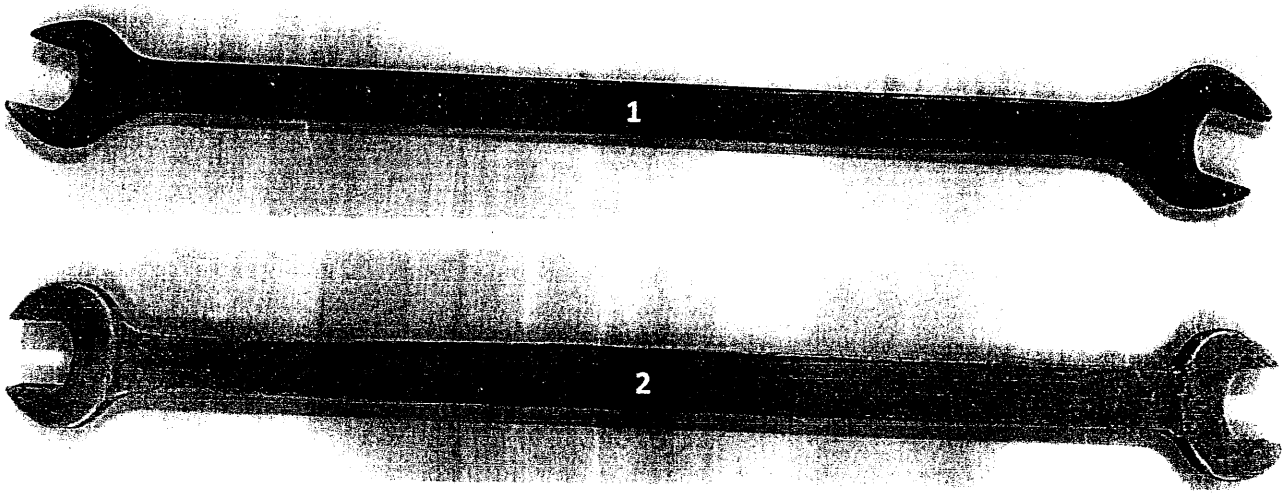


Fig. 1 Modified Spanner
Fig. 2 Conventional Spanner

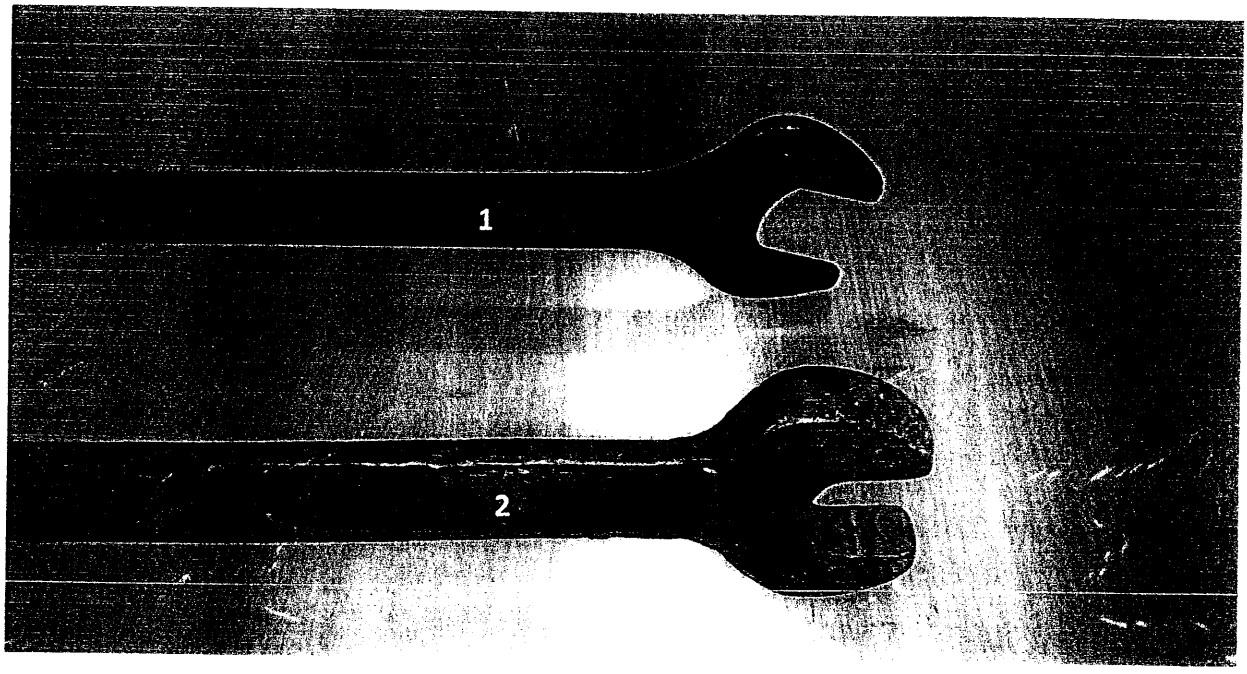


Fig. 1 Modified Spanner: with less weight and less head width.
Fig. 2 Conventional Spanner:

Annexure - II

Specification of Keyman's shoulder Tool Bag (Pathan Bag)

Sr. No.	Material	Specification
1	Cloth Light Weight	Laminated canvas 2 mm waterproof
2	Cloth thickness	2 mm
3	Dimension	Height – 50 cm, width 27 cm, breadth – 12 cm
4	White florescent / Radium indicator on the flap of bag	3M of USA or / Reflexive USA / Ireland or Avery Dennison of USA or Reflomax of Korea.
5	Threads (used in stitching)	3 PLY
6	Clip as switche in waist belt	PVC clip heavy type
7	Broad double strap Belts to handle and carry bag from shoulder and waist	SR Nibar 2 inches.
8	Thick leather bottom at base and sides upto 4 inches height	PU – 1M
9	Velcro (to hold flags and pockets)	Very High Quality
10	Pockets to keep each tool at nominated place	As per dimension below

Dimensions of pockets:-

Pockets No.	Dimension in Inches.	For Keeping
1	7.5X8	Detonator
2	6 X 8	Keymen diary
3	7.5 X 3	Flags
4	7.5 X 13	Water bottle
5	7X8	Magnifying glass, plan mirror and clearance gauge
6	5.25X9.5	Filler gauge, rail closer and tapered pin
7	5.25X9.5	First aid box and emery paper

Note:

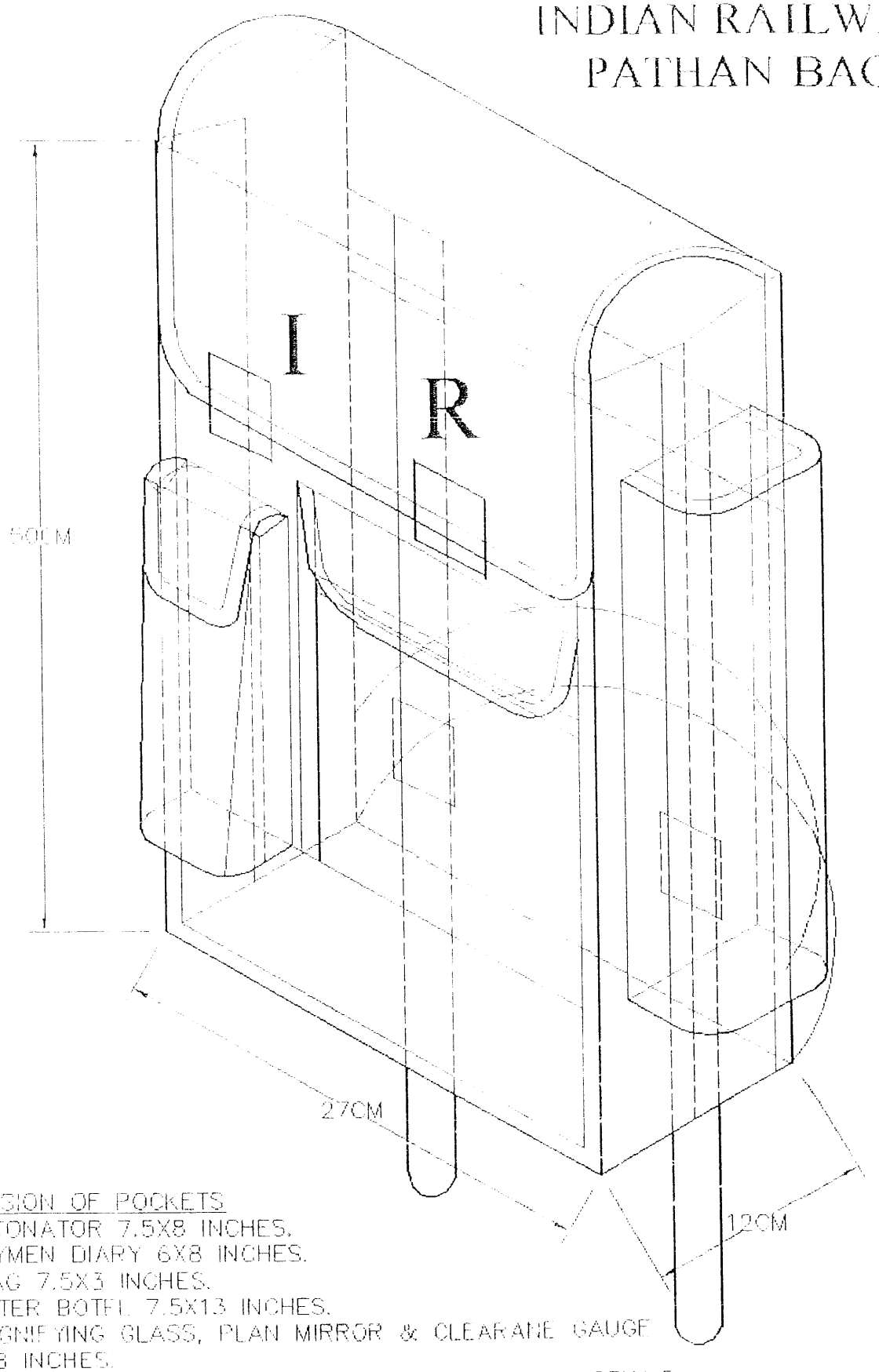
1. Pocket No. 1,2,3 & 4 are provided outside.
2. Pocket No. 5, 6, 7, 8 are provided inside the bag.

19/1/18

----------x x x ----------

DyCE(TM)

INDIAN RAILWAY PATHAN BAG



DIMENSION OF POCKETS

1. DETONATOR 7.5X8 INCHES.
2. KEYMEN DIARY 6X8 INCHES.
3. FLAG 7.5X3 INCHES.
4. WATER BOTEL 7.5X13 INCHES.
5. MAGNIFYING GLASS, PLAN MIRROR & CLEARANE GAUGE 7X8 INCHES.
6. FILLER GAUGE, RAIL CLOSER AND TAPERED PIN 5.25X9.5 INCHES

(79)

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

No. 2014/CE-II/Genl/DC/JCM New Delhi, dated 04.03.2016

The Principal Chief Engineers
All Zonal Railways

Sub: Provision of accommodation to trackman in accident relief trains.
Ref: This office letter of even No. dt. 16.05.2014

Vide above referred letter, instructions to provide accommodation to trackman in accident relief trains were issued to all Zonal Railways. The instructions are being reiterated as below:-

"Whenever Civil Engineering/OHE material train is taken to an accident site, a passenger coach must be attached in the formation for use by Trackmen and other staff. Normally such trains are formed /dispatched much later than ARMV/ART and sufficient time is available for arranging the coach. The first available coach should be used for this purpose irrespective of its class to ensure that speed of the restoration material reach the site is not compromised. Attachment of a coaching vehicle with the material train carrying relief material to the accident site, dispatched subsequent to ARMV and ART, should also not unduly delay the departure of the material train. The concerned department (Civil Engineering in case of Trackmen) may requisition the attachment of a coach from the Operating Department."

The above instructions were issued with the approval of AM(PU), AM/CE & Adv./Safety. The action taken by Railways on the above instructions shall be advised **by 07.03.2016**. Please treated as Most Urgent.

(Pankaj Tyagi)
Director/Civil Engg.(Plg)
Railway Board

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2012/CE-II/TK/Trackmen Report/pt

New Delhi, Dt. 11.03.2016

Principal Chief Engineer,
Northern Railway, North Eastern Railway,
Southern Railway, South East Central Railway
Western Railway,

Sub: Trial of VHF based approaching Train warning System for Trackmen

The Keymen and Patrolmen working on track are on their own and have no additional support to forewarn them about approaching trains. With increase in traffic, the margin available for working of trackman has also considerably reduced. Such hazardous working conditions in open line cause many unfortunate run over cases.

The limited trial of VHF based system was conducted on South Central Railway & Northern Railway. The equipment provided to patrolman has been found very helpful for getting the advance information regarding both UP and DN approaching trains by way of LED indication along with audible buzzer and vibration, thus, adding additional safety for patrolmen. Based on inputs from these trials, RDSO(Telecom Dte.) has drawn draft specification No. RDSO/SPN/TC /105/ 201/2015 Rev.0.0) for "VHF based Approaching Train Warning System for Track Maintainer".

Board(ME) has approved trial of VHF based Warning system in sections of one SSE/Pway (30-40 km) each on Five Zonal Railways in double line (primarily) and singie line section

Following broad guidelines will be followed for undertaking the trials of the system on Zonal Railways:

(i) Finalisation of generic specification of system: Telecom Dte. of RDSO will be responsible for finalising generic functional specification of the system in consultation with Track and TMM Dtes. of RDSO.

(ii) Procurement of System based on these specifications will be done by Engineering Department of the concerned Zonal Railways. Before taking procurement action, the following will be tied up:

(a) Processing for WPC Licence: The number of sets required for trials will be advised by Engineering Department to S&T Department. S&T Department will be responsible for obtaining the WPC Licence from Department of Communication.

(b) Identification of space for keeping the Transmitter: Engineering Department in consultation with S&T and Operating Departments of Zonal Railways will finalise the fixing arrangements for keeping Transmitters in Station Masters Room with suitable power supply. The equipment shall be properly protected against outside interference. The safe keep of unit will be the responsibility of Station Master.

(c) Arrangements for Hand Held Receivers: The Hand Held Receivers will be available with the concerned field staff i.e. Gangmate/Keymen/Patromen who will be responsible for safe custody. However suitable arrangement for charging of Hand Held Receiver shall be made.

(d) Arrangement for providing feed from relay room: Necessary feed required for VHF Transmitters from relay and connection to the Transmitter will be done under the supervision of S&T staff. S&T staff will be responsible for maintenance of the same.

(e) Each Zonal Railway will make out the detail JPO in this regard before actually processing for the procurement of system.

(iii) The procurement action of requisite equipments will be undertaken by Engineering Department. The S&T Department shall be closely associated during procurement action.

(iv) Installation and commissioning shall be done in association with S&T Department. The Commissioning Certificate of equipment shall be jointly issued by Engineering and S&T Officers. The inspection of equipments before dispatch, if required, will be done by Telecom Dte. of RDSO.

(v) The procurement action will be taken through open tenders based on generic functional specifications developed by RDSO.

(vi) RF signal of the system shall also be used for improving safety on UMLCs by giving forewarning to road users in the form of blinking red light about any approaching train.

Railways shall identify around 30-40 km section in one SSE/P.way sections which shall be in non-automatic signal territory, high density traffic (GMT), high frequency of running trains, sharp curves and steep gradients. Railways shall advise the identified locations alongwith data for approval of Railway Board.

The expenditure will be charged to revenue. This has the approval of Traffic, Signal, Telecom & Finance dte of Board.

(Pankaj Tyagi)
Director Civil Engg.(P)
Railway Board

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No. 2014/CE-II/BR/Bridge Policy New Delhi, Dated: /04/2015

Principal Chief Engineers
All Indian Railways.

Chief Administrative Officers (Const.)
All Indian Railways.

Sub: Span arrangement of Railway Bridges.

Large number of railway bridges are being constructed during doubling, tripling, gauge conversion, new lines, on replacement account of existing bridges etc. The span arrangement and requisite waterway of these bridges are being decided based on hydrological parameters, economy in design, ease of construction etc. Selection of spans should be carefully planned to ensure that vertical profile is maintained to ensure smooth running of trains. Also, track center to be generally maintained so that reverse curves are not introduced on the bridge approaches. This can be achieved by constructing foundation by adopting adequate safety measures and modern construction methods to enable safe train operation on the adjacent track. Needless to say that adequate waterway is very important parameter in the design of new bridges. Therefore, it is important to consider all the relevant parameters like topography, catchment area, run off coefficient etc prevalent during the time of bridge construction.

You are requested to acknowledge the receipt of this letter.

(B. K. Sinha)
Advisor/Bridge
Railway Board

Copy to:-

AM(W), ED(W), ED(WP), EDCE(B&S), DCE(B&S)

(43

GOVERNMENT OF INDIA
MINISTRY OF RAILWAY
(RAILWAY BOARD)

No.2012/CE-III/BR/Rly Federation New Delhi, Dated : 29-04-2015

Principal Chief Engineers
All Zonal Railways.

Sub: Provision of man refuges on girder bridges.

Ref: (i) RDSO's letter No.CBS/Pathway dated 22/23-09-2010.

(ii) RDSO's letter No. CBS/C-80 dated 24/05/2011.

Vide letters under reference above, zonal Railways have been advised to provide man refuge for the safety of the Railway staff on the girder bridges as per drawing issued by RDSO. The progress achieved and the action plan for the remaining work in this regard may be furnished to this office. Further, the monthly progress report on the same may be sent to this office by the 5th of every month.

(V.K.Jain)
Director/CE(B&S)
Railway Board

Copy to:

1. Chief Bridge Engineers, all Zonal Railways.

GOVRERMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No.2013/CE-III/BR/IRBM New Delhi. Dated 12.05.2015

Principal Chief Engineer,
All Zonal Railways

Sub: Approval of General Arrangement Drawing (GAD) of major bridges on DFCCIL alignment

The work of DFCCIL has been put on fast track with very tight schedules. There have been a few instances of work getting delayed due to late finalisation of General Arrangement Drawing (GAD) of bridges. The matter has been reviewed and it has been decided that henceforth, the following time scheduled to be strictly adhered for the approval of GADs;

i. DFCCIL should submit the GAD directly to the concerned Sectional DEN/Sr.DEN who should examine the GAD and send it to CBE within five working days.
ii. While submitting the GAD to the Division, DFCCIL should also send a copy of the same to CBE directly so that the case can be monitored by CBE.
iii. The GAD should be approved within five working days by CBE after receiving it from the Division.

In case, the GAD is likely to be held up in the Division beyond the stipulated time schedule, CBE should interact with the Division so that the time schedule is not vitiated.

DFCCIL, while submitting the GAD to the Division, should ensure all extant Codal provisions have been observed. Also the Bridge Register should be scrutinised to ensure that adequate waterway and suitable spans have been incorporated in the GAD so that the same can be approved expeditiously.

(S. K. Pathak)
Executive Director CE/B&S-II

Copy to MD, DFCCIL. He may kindly ensure that GAD is prepared as per Codal provisions with above instructions in mind so that GAD can be approved within stipulated time period.

GOVRERMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

(85)

No.2014/CE-III/BR/Bridge Policy New Delhi, Dated 29.05.2015

Principal Chief Engineer,
All Zonal Railways

Chief Administrative Officers (Construction)
All Zonal Railways

Sub: Construction of Road Under Bridge (RUBs)

It has come to the notice of Board that at some locations there had been certain collapse of earth while carrying out the work of Road under Bridges using Box Pushing Techniques and this led to unsafe conditions. This issue has also been discussed in the recently held PCE conference on 22nd of April 2015 and it has been reiterated that Box Pushing Technique should not be resorted for providing Limited Subway / RUB.

In view of the aforesaid, Zonal Railway is directed to construct the Road Under Bridges or Limited Height Subway preferably by using relieving girders to the extent possible and in exceptional circumstances Box Pushing Techniques should be adopted that too, with the personal approval of PCE / CAO (C) concerned.

29/5/2015

(S.K. Pathak)
Executive Director/CE/B&S-II
Railway Board

Copy to:

1. Chief Bridge Engineers, All Zonal Railways.
2. ED/B&S, RDSO
3. ED/Structures, RDSO

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No. 2014/CE-III/BR/Bridge Policy

New Delhi, dt. 25.06.2015

Principal Chief Engineers,
All Zonal Railways.

Sub.: Availability of relieving girders in adequate nos.

Relieving girders of different spans are required to be kept readily available by the zonal railways for restoration in the event of any breach/washout/accident etc. However, it is observed that adequate no. of relieving girders especially 26.8m girders are not available with railways at present. Recently, for restoration of a bridge site, 26.8m & 19.8m relieving girders had to be transported from Northern Railway to Northeast Frontier Railway. This situation is not desirable.

It is therefore advised that adequate no. of relieving girders of various spans including 26.8m girder conforming to 25T loading are available with all zonal railways so as to ensure early restoration of site in case of any eventuality.

The action may be taken immediately on above and compliance may be sent to this office.

Sinha
25/6/15

(N.K.Sinha)
Adviser/Bridges
Railway Board

GOVERNMENT OF INDIA
MINISTRY OF RAILWAY
(RAILWAY BOARD)

87

No.2015/CE-III/BR/Water Level Gauge New Delhi, Dated : 02.07.2015

Principal Chief Engineers,
All Zonal Railways

Sub: Installation of Water level monitoring system at Railway Bridges

Water level at the identified railway bridges are required to be regularly monitored so as to take appropriate action as and when the water level reaches/crosses the threshold limit(s). In order to remotely monitor the water level, Water Level Measuring Instrument (WLMI) alongwith Intelligent Field Device (IFD) can be installed that communicates with WLMI and transmit the water level data to a central server so that water level can be monitored from anywhere over internet browser and through SMS alerts based on various threshold limits. The data can also be transmitted to Track Management System (TMS) etc. as per defined frequency. This system eliminates round the clock manual observation and monitoring. One such device has been installed and successfully tried on old Yamuna bridge in Delhi division of Northern Railway.

2.0 In view of above, it has been decided that all Zonal Railways identify ten important bridges in their railway and install the water level measuring system on them within next six months. A copy of the specifications of water level monitoring system successfully tried on Northern Railway is enclosed herewith.

3.0 The action taken and the progress of the aforesaid work may be furnished to this office in the monthly progress reports.

Matter may be treated as "Most Urgent".

DA: As above

(S.K. Pathak)
Executive Director CE/B&S-II
Railway Board

Copy to:

Chief Bridge Engineers, All Zonal Railways, for information and necessary action.

Intelligent Internet Based Water Level Monitoring System for Bridges

1.0 Definitions and Abbreviations

WLMI : Water Level Measuring Instrument
IFD : Intelligent Field Device
TMS : Track Management System
SCADA : Supervisory Control and Data Acquisition

2.0 General

2.1 The specifications given below are meant to broadly bring out the technical and performance requirements of Intelligent Internet Based Water Level Monitoring System for Bridges.

2.2 Water (flood) level monitoring is an important work for bridge on Railway System. At present, there is a manual way of observing the water level based on the marking on bridge pier(s). In order to remotely monitor the water level, it is planned to install Water Level Measuring Instrument (WLMI) along with Intelligent Field Device (IFD) that shall communicate with the WLMI and transmit the water level data to a central server. User will be able to monitor the water level from anywhere, anytime over a Internet browser. User shall also be able to receive SMS alerts based on various thresholds of regular level, danger level or high flood level. The data input from Central Server has also to be given into Railway IT Applications viz. Track Management System (TMS) etc., as per defined frequency.

3.0 Components of System

3.1 Water Level Monitoring Instrument with suitable fixing platform.

3.2 Intelligent Field Device (IFD) – It establishes communication between WLMI and Central Server. It collects Water Level data from WLMI and sends to Central Server. It also takes commands from Central Server.

3.3 Tier III hosted Central Server for communication between IFD and Central Server as well as between Central Server and Railways IT Applications viz. Track Management System (TMS).

3.4 Integration of Central Server with Railways IT Applications viz. Track Management System (TMS).

4.0 Service Conditions

4.1 Location : Outdoor in open
4.2 Ambient Temperature : (-)10^0 C to (+)55^0 C
4.3 Humidity : 5% to 95% non-condensing
4.4 Atmospheric Condition : Dusty, Foggy
4.5 Rainfall : Fairly Heavy

5.0 General System Requirements

The IFDs for measuring, capturing and transmitting the Instantaneous Water Level to central server should be an integrated hardware and software platform. The system should comprise of IFDs connected to the centrally hosted server over GPRS network. Users shall be able to access the information over the web browser interface for monitoring its equipments. Users simply need to install ready to use Intelligent Field devices (IFDs) over water level measuring instrument. IFDs are ready to use devices comprising of sensor interfaces with Power Supply, Battery Back-up, and GPRS Communication with Inbuilt Smart Display of any local or remote parameter. As soon as the IFDs are plugged in, it directly communicates with the Central data Server and user simply needs to open the Internet browser and login with a secured username and Password. After logon, the user can view sensor data instantaneously and historically, get alerts and alarms over SMS and Email. System should have following key features:

5.1 IFD should have GPRS/3G/4G capabilities to establish communication channel with Central Server.

5.2 IFDs shall automatically connect itself to the Central Server, set up a unique communication channel for individual device and maintain continuous connection for sending and receiving the data over its unique communication channel. The IFD shall automatically publish the information to the central server, and subscribe to Central Server for control commands, provisioning commands etc from the Central server. Central Server shall never poll any information from field devices and all field devices shall always remain connected to the central server and publish information at same time.

5.3 Besides having the unique communication channel for each IFD, the system should have Bi-directional communication for Monitoring, Instant control commands etc between IFD and Central Server such that IFD to use regular GPRS facility of any Cellular Service Provider which generally employ either Dynamic-IP policy or Private-IP-With-Proxy policy. This bi-directional communication shall not be dependent on any static IP for IFDs or VPN connections. The details of current methodology used for bi-directional communication between IFDs and Central server for monitoring and control should be provided.

5.4 The web based application software and services shall be hosted at a minimum of Tier III level data centre in India by the vendor as part of work and the Railways shall have web browser interface based access to the application. The Web Interface should be on secured layer using https protocol based on 128-bit SSL encryption. The software database should be in RDBMS platform with RAID based Storage architecture. Vendor has to provide a certificate that the servers are hosted at a minimum of Tier-III level data center.

5.5 The web based application software and services should have following features:

a) Able to be accessed from a simple Internet browser from anywhere and to be available 24x7 over web.

b) Should have reports with Graphical and Tabular presentation of data and shall provide multiple layers of reports, comparison reports and graphs for data analysis for – Sensor Parameters as well as Derived Parameters. There should be a facility to export data and graphs into Excel and PDF

c) Should facilitate user selectable date and time range for viewing Daily / Weekly / Monthly / reports.

d) Should provide messages-Alerts and Alarms for user-defined threshold crossing of water level via SMS and/or Email as per requirement. Bi-Directional SMS sending/receiving by the user should strictly be through a central server and not through IFD.

e) User should be able to monitor, as well as control based on time or water level (as applicable) from remote website. The rules and threshold for levels should be able to be defined from remote location.

5.6 The communication between the IFDs and Central Server Software shall happen on Message Queuing Publish Subscribe mechanism based telemetry transport protocol. The protocol should have data acknowledge features, and in case data received acknowledge message is not received from Central Server, there shall be retry mechanism in IFD. Further, the protocol should have PING with acknowledge feature to provide constant and continuous connection.

5.7 Also, there should be message queuing technology (MQ) based data exchange between central server and Railways IT Applications viz. TMS etc.

5.8 In case of disconnection, the status shall be updated at the server within 30 seconds with the time stamp.

6.0 Water Level Measuring Instrument (WLMI) Specifications

Water level measuring instrument is a Pulse RADAR Two-Wire Transmitter using microwave technology. RADAR should measure water level continuously and accurately up to a range of 30m. The WLMI should be suited for dusty, rainy & high-pressure conditions. The WLMI should have a special demodulation technology enabling itself to detect the time lapse between pulse emission and reception correctly, thus eventually generating accurate measurement. The WLMI should have following key features:

6.1 Equipped with microprocessor and echo discovery echo processing technology, the WLMI should have false echo storage function to detect the true echo in the presence of false echo, captured to the memory of the microprocessor based system, thus eventually generating true echo.

6.2 Maximum Range: Upto 30m.

6.3 Accuracy: +/- 10mm

6.4 Process Connection and Horn type antenna to be of stainless steal

6.5 Standard Industry Analog Output compatible with IFD

87/5

6.6 Protection: IP67

6.7 Display and Keyboard for calibration, implementation and changes of process parameters.

WLMI should be mounted on customized Bridge platform as per site condition having suitable arrangement for person to reach the instrument for maintenance, in proper enclosure suitable for specified service conditions.

7.0 Intelligent Field Device (IFD) hardware Specifications/Features

Intelligent Field Device should have following specifications/features:

7.1 An IFD shall be of **"SINGLE INTEGRATED UNIT"** consisting of following:

a) 32 Bit Remotely Configurable Microcontroller Platform with speed up to72MHz.
b) Power Supply –Single phase with battery backup and inbuilt charging
c) On-board Real Time clock
d) RS232 Serial.
e) Inbuilt communication modem with 3G GPRS data communication facility.

7.2 IFDs shall communicate on WAN technologies such as 3G and GPRS as a primary source using assured data delivery protocol over TCP/IP. Intelligent IFD should have inbuilt GSM/GPRS Modem with following specifications:-

a) Plugin modules for direct interfacing with microcontrollers
b) Should have connectors for external magnetic antenna
c) There should not be any requirement of separate Power Supply, and Modem should work on same power supply as used for IFD unit

7.3 IFDs are to be connected to WLMI to communicate water level data to central server every 15 minutes. This time should be configurable from remote location.

7.4 IFDs shall have Local Data Storage in case of intermittent communication failures. Each IFD will have internal memory up to 4MB (expandable up to 8 Mb) to store the data in case of interruption 3G and GPRS communication channel.

7.5 LEDs for IFD health and diagnostics.

7.6 The Application logic shall be programmed at the web interface using Rule Engine and IFD unit shall be remotely updated with the application logic via Over The Air Provisioning interface.

7.7 IFD should be capable of inherent local intelligence as following:

a) Inbuilt device rule engine for executing the sequences and conditions configured via web interface configuration. Special engineering skills, programming skill shall not be required to edit and change the rules.
b) Apart from field IO, unit shall have timers, registers, and flag to add special rules as per field conditions.
c) Perform regular operations of monitoring, Sequential operation and communication with data center.

d) Accept the commands from data center when on battery backup also.
e) Automatic time synchronization with server.
f) On Demand Device Reading
g) Time stamping of data stored or sent by an IFD.
h) Device shall have inbuilt device diagnostics and shall transmit the diagnostic data to server in case of failure.
i) Device shall log the power supply (mains) failure, battery health parameters with timestamp.
j) Device shall maintain the continuous connection with the server and check the health of connection with the help of regular application level ping messages.

7.8 Each IFD will have battery backup of 8 hours minimum in order for Intelligent Field Device to communicate with data server in case of power failure. IFD should send Power Fail and Power Restoration alerts to server and an IFD should operate on battery power mode during this condition.

7.9 All electronic component used in IFD shall be lead free.

8.0 Central Server Application Software Specifications:

8.1 System should be built on Service Oriented Architecture with capability to integrate with third party systems like existing / future enterprise systems using open standards for receiving as well as sending the data.

8.2 The web based application software and services shall provide ready to use as well as customized Reports, Integration with existing SCADA, and Integration with Engineering systems, TMS, Unified Dash Boards and Rule Engines etc.

8.3 Should provide role-based access of its services and various reports to different personnel from operator to top management.

8.4 Should have multiple layers of security in the system for safe operation. This means that there should be a separate login and viewing password and a separate password for control of equipments (as applicable).

8.5 Should have following physical hardware and software layers that are vertically and horizontally scalable:

a) Data Acquisition Layer working on Publish / Subscribe assured delivery mechanism
b) Application Layer for processing data, generating web reports, executing application rules and schedules etc.
c) Data Historian with RAID based storage architecture.
d) Web Server to provide Business Reports and Historical data access to web browser clients

9.0 Integration of Central Server with Railways IT Applications viz. TMS

The data exchange between IFD central server and Railways IT Application viz. TMS etc. should be on message queuing technology with following features:

8717

(13)

9.1 Data Acquisition Layer should work on open source MQ based secured and encrypted Publish / Subscribe assured delivery mechanism.

a) The publish/subscribe message pattern provides one-to-many message distribution and decoupling of applications.

b) This messaging transport is to be agnostic to the content of the payload.

c) This uses basic TCP/IP to provide network connectivity.

9.2 Data acquisition layer must be platform independent and able to run on Linux or windows etc. operating system and should be developed in java (jdk6).

9.3 Data of various devices should be published from Central Server to TMS server as per periodicity specified by Railways.

9.4 Data publish time interval should be configurable.

9.5 In case of any communication failure or downtime at Central Server or TMS server, there shall not be any loss of data and there should not be any requirement of separate database sync application. Application should have a feature Connection / Disconnection between the servers shall be recorded with timestamps.

9.6 The IFD-Central Server format shall comply with TMS application requirements.

9.7 The data acquisition layer should have the flexibility of adding other multiple devices installed at various other applications of Indian Railways.

9.8 The data acquisition layer shall comply with firewall policy of TMS system.

9.9 64 bit data Encryption with private and public key wherein the private key remains with TMS system

9.10 Data Exchange Format between Cloud and TMS System:

App Id	DECIMAL(2)	2 - Water Level (Bridges)
Division Code	VARCHAR(8)	Variable Length of 1-8 Characters
Asset ID	VARCHAR(12)	Variable Length of 1-12 Characters
Date	VARCHAR(10) (DD/MM/YYYY)	Fix Length of 10 Characters
Time (24 hour format)	VARCHAR(8) (HH:MM:SS)	Fix Length of 8 Characters
Water Level	DECIMAL(6,2)	Eg. 1000.25 (in meter)
Node ID		Node ID of equipment. To be obtained from Cloud Vendor
Data Exchange Frequency	-	Configurable
Data Separators	-	"

******

Government of India
Ministry of Railways
(Railway Board)

No. 2014/CE-III/BR/Bridge policy New Delhi, dt. 31.08.2015

Principal Chief Engineers
All Zonal Railways

Chief Administrative Officers/Const.,
All Zonal Railways

Sub: Use of High Strength Friction Grip (HSFG) bolts on Indian Railways.

Riveted Steel Girders have been in use on Indian Railways since beginning. However, the concept of riveting has become outdated now due to various reasons. Large scale welding for Bridge Girders is also not proving to be a better option for Indian Railways as there are quality concerns with the field welding. There is a need of adopting a suitable alternative. To keep pace with the latest technological developments, as a suitable alternative to riveting, HSFG bolts can be adopted which do not have any such issues.

2. Necessary correction slips updating various bridges related Codes and Manuals for incorporating use of HSFG bolts have already been issued. Accordingly, RDSO has modified and issued the following drawings of bridge Girders with HSFG bolts:

(i) Plate Girders, 25T loading: 12.2m, 18.3m and 24.4m.
(ii) Composite Girders, 25T loading: 12.2m, 18.3m, 24.4m & 30.5m.
(iii) Open Web Girders, 25T loading: 30.5m, 45.7m, 61m & 76.2m.
(iv) Composite Road Over Bridges: 18m, 24m, 30m & 36m.
(v) Bow String Arch Road Over Bridges: 30m, 36m, 42m, 48m, 54m & 60m.

3.0 Now it has been decided that for all future Bridge Works, drawings with HSFG bolts to be used. Even for existing drawings, rivets can be substituted by HSFG bolts in consultation with RDSO wherever feasible from contractual point of view.

(S.K. Srivastava)
Executive Director CE/ B&S
Railway Board

Copy for information and necessary action:

(i) Chief Bridge Engineers – All Zonal Railways
(ii) ED/B&S/RDSO
(iii) Director/IRICEN
(iv) CMD/RVNL
(v) CMD/DFCCIL
(vi) CMD/KRCL
(vii) CMD/ IRCON

(95)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2004/CE-II/BR/Bridge Policy

New Delhi, dated 05.10.2015

PCEs
All Zonal Railways

Sub: Measurement of longitudinal movement of bridge bearings

1. Proper measurement of bearings movement is an important assumption in design of sub structure and super structure of bridges. However, it is observed that design assumptions are often not realized in field. There is a need to assess the actual movement of bridge bearings at site vis-a-vis design assumptions. Chief Engineer (CE) has now desired that actual field data regarding movement of bridge bearings should be collected from field and correlated with respect to design assumptions.

2. Northern Railway has installed an arrangement for measuring of longitudinal movement of bridge bearings at one of their bridges. Schematic diagram and site photographs are attached. The arrangement was to be prepared with readily available scale and pointer and no elaborate setup is required for fixing it. Similar arrangement with site specific modifications may be adopted for other bridges.

3. All zonal railways should identify 5 bridges each with Roller, Pot/PTFE and Elastomeric bearing (i.e., 15 bridges on each railway preferably on large spans) and arrange for measurement of longitudinal movement of bearings. Movement may be observed every fortnightly for 3 months and data should be submitted to this office for further analysis and action. Arrangement may be made to start recording of movement of bridge bearings latest by 31.12.2015.

Please acknowledge receipt of this letter.

(S.K. Srivastava)
ED(B&S)-II
Railway Board

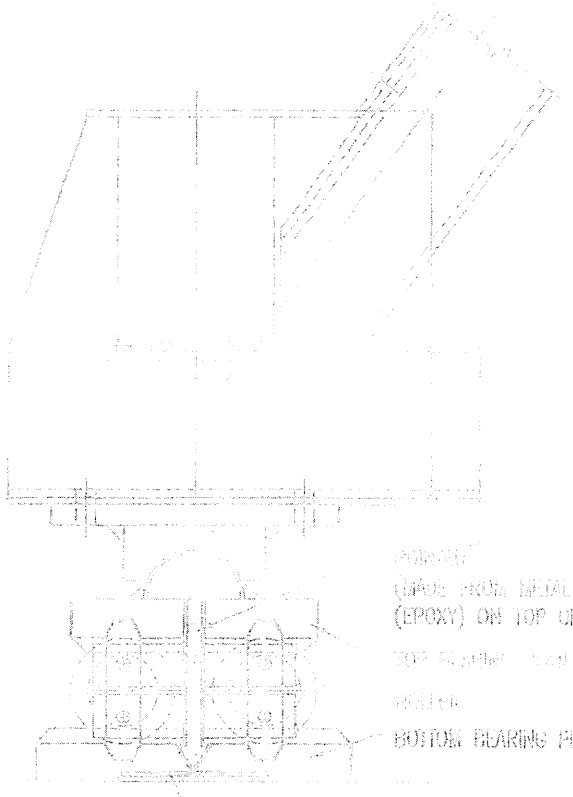
Encl: As above

Copy to:
ED(B&S) and ED(Structures), RDSO, Manak Nagar, Lucknow

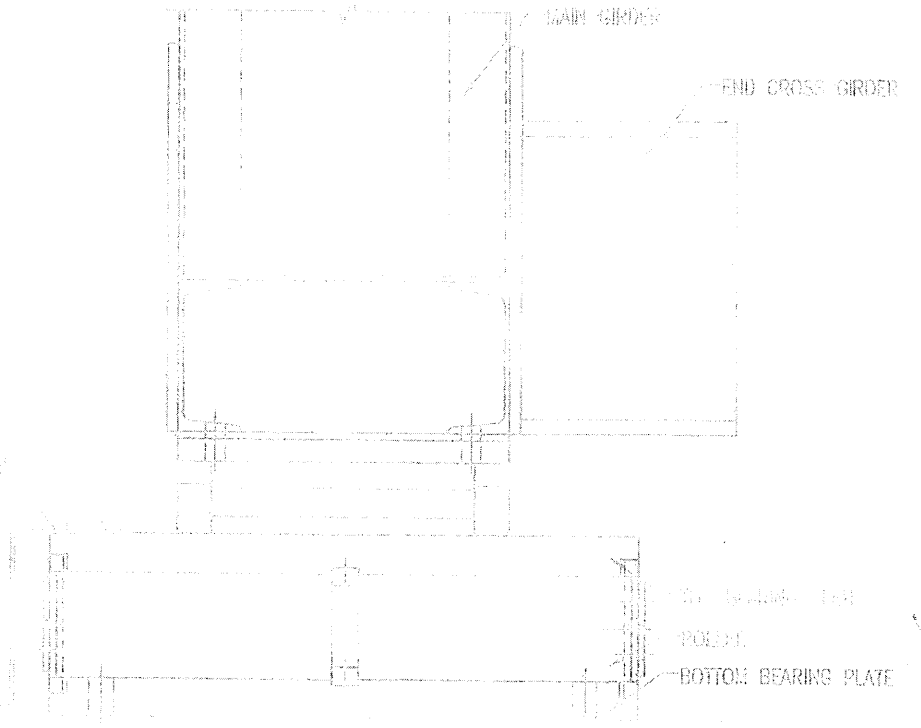
ARRANGEMENT FOR MEASURING LONGITUDINAL MOVEMENT OF BRIDGE BEARING

NOTE:

1. ARRANGEMENT TO BE ADOPTED AS PER SITE CONDITION, BRIDGE TYPE, BEARING TYPE (ROLLER, POT/PTFE, ELASTOMERIC ETC.)
2. POSITION, LENGTH AND ORIENTATION OF SCALE MAY BE ADJUSTED AS PER SITE CONDITION

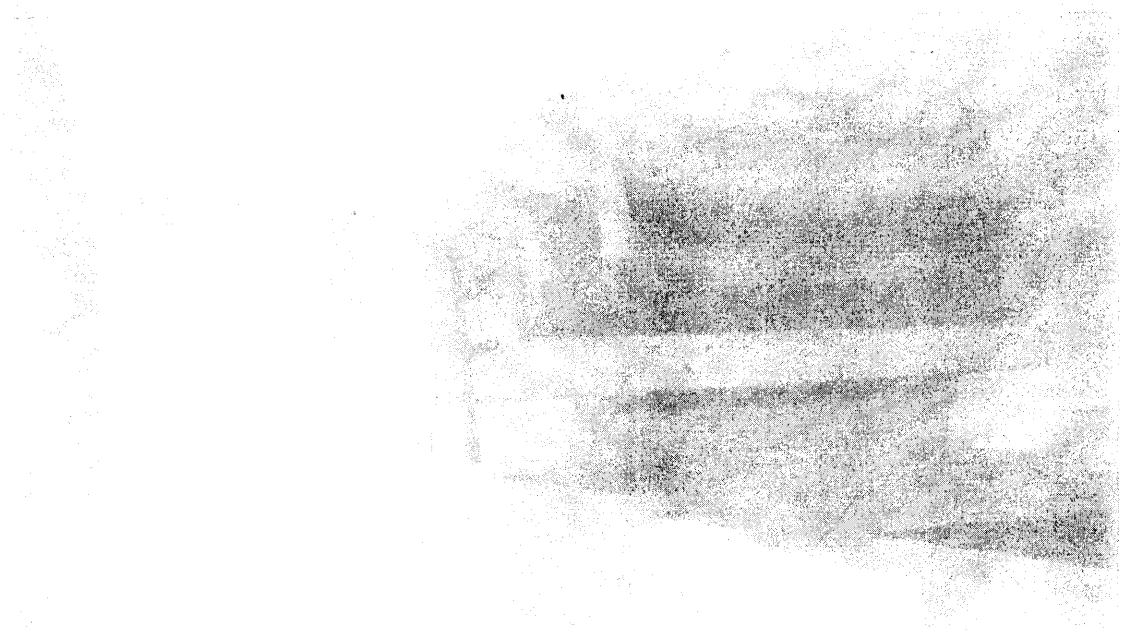


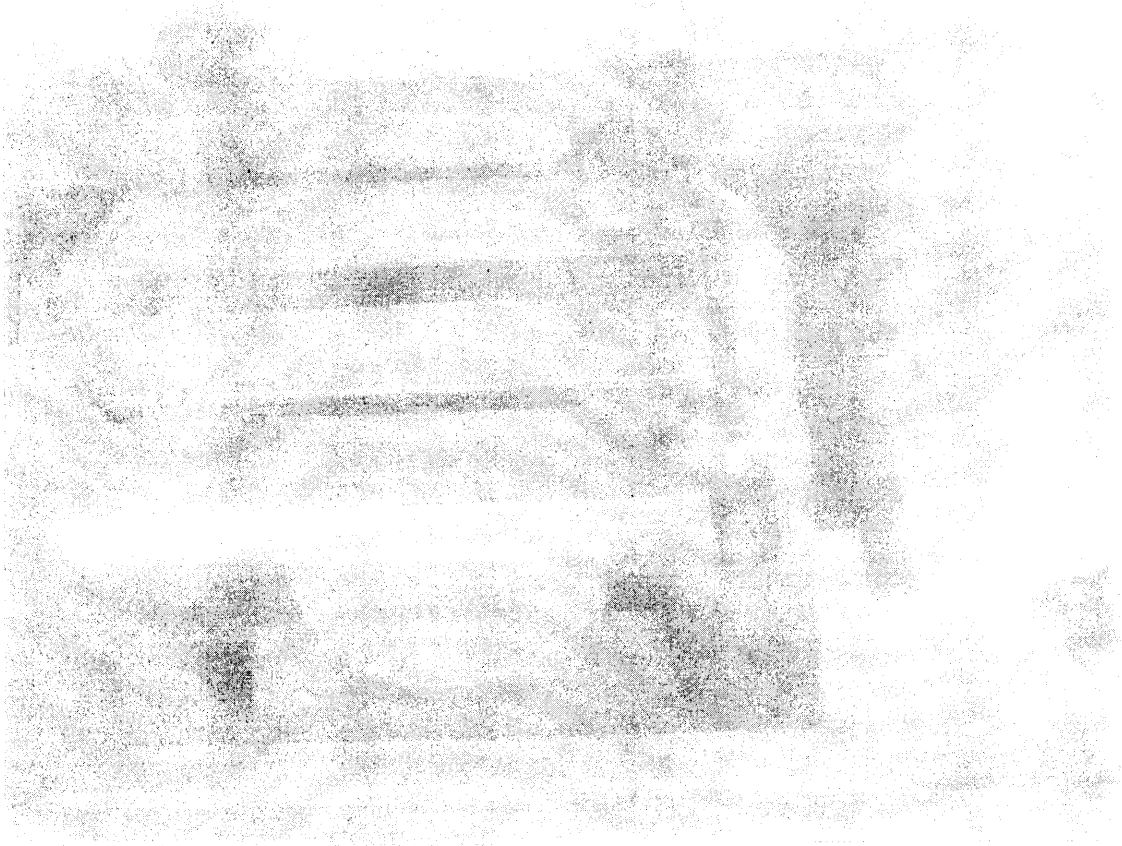
LONGITUDINAL VIEW



SIDE VIEW

(1.9)





(98

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No. 2015/CE-III/BR/Water Level Gauge New Delhi, dtd. 05.11.2015

Principal Chief Engineer
NF Railway

Sub: Installation of Water Level Monitoring system at Railway Bridges
Ref: 1)Board's letter of even number dated 02.07.2015
2)CBE/NFR letter No. W/FCW/MLG/G-I(AG&T) dated 20.10.2015

Vide letter under reference 1) above, instructions were issued to all zonal railways to identify ten important bridges in their railway and install water level monitoring system on them. A copy of the specifications of water level monitoring system successfully tried on Northern railway was also enclosed.

The main purpose of installation of the above system is to monitor the water level data remotely through internet/SMS alerts and integrate it seamlessly with TMS application so as to take appropriate action as and when water level reaches/crosses the threshold limit(s) for safe movement of rail traffic. This system eliminates round the clock manual observation at site. The specifications attached with Board's above referred letter are generic in nature having required features for seamless integration with TMS. However, zonal railways may send any specific suggestion in regard to modification/ change in specification(s) which will be duly considered in consultation with CRIS. Suggestions, if any, may be sent in next 10 (ten) days time. While suggesting changes it may be kept in mind that various sensors/ measuring equipment being placed on tracks, bridges etc. have to be TMS compatible incorporating data/communication security/ safety.

It is reiterated that the initial deadline given by Board for installation of Water Level Monitoring system should be strictly adhered to.

Sanjay/5.11.15
(S.K. Srivastava)
Executive Director Civil Engg./B&S
Railway Board

Copy to: All PCEs

(199)

Government of India
Ministry of Railways
(Railway Board)

No. 2015/CE-III/BR/River protection works

New Delhi, dt. 16.11.2015

Principal Chief Engineers,
All Zonal Railways

Sub: Status & Maintenance of Guide bunds of Railway bridges

River Training/Protection works are provided at railway bridges to prevent the river from damaging railway formation bridges and other structures. One of the commonly adopted river training works is providing Guide Bunds at major/important bridges Guide Bunds are meant to confine and guide the river flow through the structure without causing damage to it and its approaches. Thus it is needless to say that their proper maintenance is very important for the safety of the bridge. However, it has come to the notice that due attention for their maintenance is not being paid at some locations. It is therefore advised to ensure that all the guide bunds are inspected and maintained properly as per the codal provisions. The list of bridges where guide bunds are provided may be sent to Board in the following proforma:

SN	RLY	DIV	Section	Br no	Km	Imp/Maj	Span arrangement	Type of bridge	Year of construction
1	2	3	4	5	6		8	9	10

Name of river	U/s side guide bund length (m)		D/s side guide bund length (m)		Condition of Guide bunds	Remarks if any
11	Left	Right	Left	Right	16	17
	12	13	14	15		

As desired by Board (ME), Photographs of the Guide Bunds (U/S Left, U/S Right, D/S left & D/S right) wherever provided should be taken and pasted in the bridge register against the concerned bridge latest by 30.11.2015.

2.0 The list of bridges having provision of Guide bunds and the confirmation of having pasted the photographs of the guide bunds in the bridge registers should be furnished latest by 30.11.2015 for appraisal of Board (ME).

(S.K.Srivastava)
Executive Director CE/ B&S
Railway Board

Copy for information and necessary action to: Chief Bridge Engineers - All Zonal Railways

100

Government of India
Ministry of Railways
(Railway Board)

No. 2015/CE-III/BR/RDSO/Misc

New Delhi, dt. 01.12.2015

Principal Chief Engineers, All Zonal Railways
Chief Administrative Officer (C), All Zonal Railways

Sub: Protection Arrangements for RCC Box culverts & RUB/LHS

In the standard drawings issued by RDSO, there is provision of protection arrangements such as curtain wall, drop wall, wing wall, return wall etc for construction of RCC Box bridges. However, it is understood that at some places, the prescribed protection works are not being provided while building new RCC Box bridges which may endanger the safety of the bridge. It is therefore requested to look into the matter and ensure that all the protection arrangements prescribed in the drawings are provided while execution of the work.

Further, RDSO has issued drawings for protection arrangements (Cut & Drop wall etc) for RUB/LHS also. The same should be followed meticulously while construction of RUB/LHS.

(S.K.Srivastava)
Executive Director CE/ B&S
Railway Board

Copy for information and necessary action to:

ED/Structures, RDSO, Lucknow

(101)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2014/CE-II/SR/Bridge Policy

New Delhi, dated: 04.12.2015

PCEs / CAOs
All Indian Railways

Sub: Guidelines for repair, rehabilitation/rebuilding of bridges

Ref: Railway Board's letter No. 2014/CE-II/SR/Bridge Policy dt. 28.11.2014

In connection with the above, guidelines were issued for repair and rehabilitation/rebuilding of bridges vide ref. above. However, it is noticed that some of the railways have proposed rebuilding of arch bridges and replacement of early steel girders in a routine manner. In this regard it is reiterated that arch bridges are having their inherent strength and the same should not be dismantled to the extent possible. Customised cement/epoxy grouting should be resorted to in case of minor cracks and loosening of masonry. Adequate cushion over the arch should be ensured to avoid further damage to the arch bridge.

Similarly early steel girders identified for replacement of girders should be checked metallurgically to assess the quality of the steel before any decision for replacement of girders is taken.

These guidelines should be brought to the notice of all concerned field officers.

(S K. Srivastava)
Executive Director CE(B&S)-II
Railway Board

Copy to:

CBEs, All Railway Training ...

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2014/CE-III/BR/Bridge Policy **New Delhi, dated: 09.02.2016**

Principal Chief Engineers
All Indian Railways

Sub: Inspection and maintenance of waterways of bridges

Cleaning of waterways is an important item in maintenance of bridges. In this connection detailed responsibilities and action required in connection of cleaning of waterways is given in Para 201, 202, 206, 1101 and 1107 of IRBM and required to be filled in proforma for inspection of major and important bridges (Annexure 11/9 para 1103.4 of IRBM). It has, however, been found that in some cases cleaning of waterways was not given due importance at the time of inspection resulting in blockage of waterway and subsequent flooding/damage to bridges.

2) Board (ME) has desired that as a onetime exercise, dated photographs of all major and important bridges showing waterway on upstream and downstream side should be taken and made available with shared access rights. Until BMS module is fully functional, Railway may create a web based shared drive and upload photographs not exceeding 2MB in JPEG format, which can be accessed from this office. Compliance should be reported on 1/3/16.

3) Kindly acknowledge receipt and confirm dissemination on Assurance Register.

(S K Srivastava)
Executive Director/ Civil Engg.(B&S)

C/- All CTEs and CBEs

GOVERNMENT OF INDIA
Ministry of Railways
(Railway Board)

No. 2015/CE-III/BR/RDSO Misc

New Delhi, dt. 26.02.2016

Executive Director (B&S),
Executive Director (Structures),
RDSO, Manak Nagar,
Lucknow

Sub: Numerical Rating System for Railway Bridges

Vide Para 1103 of IRBM a system of Numerical Rating System of Bridges, is in force for inspection of bridges. Under the system, after inspection of bridge, a unique rating number (URN) is assigned to the bridge to represent the physical condition of the bridge. Thus the system helps in identifying progressive deterioration, if any, in the condition of the bridge. The URN of a bridge is arrived at based on the conditions of the components of bridge for which Condition Rating Number (CRN) is assigned to each of them using the following scale:

CRN	Condition of bridge component	CRN	Condition of bridge component
1	Rebuilding /rehabilitation immediately.	5	Sound condition
2	Rebuilding/rehabilitation on programmed basis	6	Not applicable
3	Require major/special repairs	0	Not inspected
4	Routine maintenance		

2.0 However, it is felt that the above provisions leave out a wide margin of subjectivity in assigning CRNs to various bridge components. The decision of repairing/rehabilitation/rebuilding is primarily taken based on the ratings assigned to the bridge and thus has significant financial implications as well. It is therefore considered necessary to issue more objective guidelines for assigning the ratings to bridges with the aim of educating the inspecting officials and minimizing subjectivity to the extent possible.

3.0 Board (ME) has desired that the standardization of Numerical Rating System should be done on descriptive-cum-pictorial basis. While certain amount of subjectivity will be inherent in any such system, the attempt should be to minimize the margin of subjectivity. In view of the above, RDSO should collect and analyse the photographs of-

a) various bridge components
b) for all types of bridges
c) depicting various condition of bridges such as CRN 1,2,3 etc. from each zonal railways

4.0 After comparison and analysis, descriptive-cum-pictorial guidelines including representative photographs should be issued by RDSO within two months time for assigning condition ratings-

a) to each bridge component
b) for each CRN
c) for each type of bridge

Guidelines thus issued should be comprehensive in nature and in cases where no representative sample photograph is available, schematic diagrams should be included in the guidelines.

(S K Srivastava)
Executive Director/ Civil Engg (B&S)

Copy to: CBEs/All zonal Railways to send the soft copy as well as hard copies of the representative photographs as mentioned above to RDSO latest by 15.03.2016.
Copy to: Director/IRICEN/PA
Copy to: EDCE(P), EDCE(G), EDTK(MC), EDTK(Mod), EDTK(P), EDCE(B&S)C, ED(Proj Mon), ED(W), ED(WP) @RB

GOVERNMENT OF INDIA
Ministry of Railways
(Railway Board)

No. 2015/CE-III/BR/RDSO Misc

New Delhi, Dt. 01.03.2016

Executive Director (B&S),
Executive Director (Structures),
RDSO, Manak Nagar
Lucknow

Sub: Guidelines for suitability of bridges for 25T loading.

Vide para 121(a) of Budget Speech 2016-17 Hon'ble MR has made the following announcements:-

"Mission 25T – to realize our goal of revenue enhancement, we need to augment our carrying capacity. A critical step in that direction is making our infrastructure suitable to carry 25T Axle load. It is proposed to introduce 10-20% freight loading through 25T Axle Load wagons in 2016-17 and target movement of 70% of freight traffic on high axle load wagons by FY 2019-20".

2 The existing railway bridges constructed in the past for lighter loading standards (BGML, RBG, MBG etc.) are required to be assessed for their suitability for 25T loading standards at different speeds, and accordingly, remedial action of strengthening/rebuilding of bridges need to be taken in a time bound manner to fulfill above announcement. In the past, RDSO has issued several instructions regarding suitability of girders for 25T loading standards. However, it is observed that in the absence of any comprehensive guide map, there is lot of confusion and uncertainties in Zonal Railway due to which proper assessment is not being done.

3 In view of above, it has been decided that comprehensive guidelines should be issued by RDSO regarding suitability of existing bridges for 25T loading standards at 75 kmph and lower speeds covering also the measures need to be taken by the zonal railways to make the bridges fit for 25T loading at 75 kmph and lower speeds. The guidelines in this regard to be issued latest by 25/03/2016 treating the issue as MOST URGENT.

(S K Srivastava)
Executive Director/ Civil Engg (B&S)

(105)

GOVERNMENT OF INDIA
Ministry of Railways
(Railway Board)

No. 2015/CE-III/BR/25 Tonne Loading

New Delhi, Dt. 10.03.2016

Principal Chief Engineers
All Zonal Railways

Sub: 25T Axle Load Operation

Vide para 121(a) of Budget Speech 2016-17 Hon'ble MR has made the following announcement:-

"Mission 25T – to realize our goal of revenue enhancement, we need to augment our carrying capacity. A critical step in that direction is making our infrastructure suitable to carry 25T Axle load. It is proposed to introduce 10-20% freight loading through 25T Axle Load wagons in 2016-17 and target movement of 70% of freight traffic on high axle load wagons by FY 2019-20".

2. The existing railway bridges constructed in the past for lighter loading standards (BGML, RBG, MBG etc.) are required to be assessed for their suitability for 25T loading. In this connection please refer RDSO's No. CBS/Golden/Q/Strength dated 8/3/2016 regarding suitability of various bridge types for 25T Axle Load Operation. In order to make an assessment of the magnitude of the work involved, Railways should immediately collect the following information and send it to Board under advice to RDSO.

Table 1: Loading standard wise break up of spans

	RBG				MBG				BGML				Non Std spans
	30.5m	45.7m	61.0m	76.2m	30.5m	45.7m	61.0m	76.2m	30.5m	45.7m	61.0m	76.2m	
No of Bridges													
Total Length													

Table 2: Superstructures requiring rebuilding/ rehabilitation

	Rebuilding/ Replacement					Rehabilitation/ Strengthening				
	30.5m	45.7m	61.0m	76.2m	Non Std spans	30.5m	45.7m	61.0m	76.2m	Non Std spans
No of Bridges										
Total Length										

3. Exercise as mentioned in para 2 above is required to assess the overall magnitude of work. However depending upon the distribution of spans on 25T route, running with speed restriction without going for any rebuilding/ strengthening may also be a viable strategy provided it does not have significant adverse impact on throughput. For example, where only isolated bridges are affected or affected bridges are clustered in one section only, imposing SR may be preferable to rebuilding/ strengthening of bridges. Railways should, therefore, critically examine identified 25T route sections keeping in mind distribution of various types of spans and come up with their own strategy for implementing Hon'ble MR's budget speech item. Railway's 25T implementation strategy

will be discussed during CBE's meeting at Board office in the first and second week of April'16.

4. While item 2 and 3 above will help in formulating Railway's overall strategy, analysis of substructure will also be required for estimating cost implications. As substructures are unique to every bridge, they will have to be analyzed individually for every bridge and rebuilding/ rehabilitation need consolidated for the Railway (Table 3)

Table 3: Substructures requiring rebuilding/ rehabilitation

	Rebuilding/ Replacement						Rehabilitation/ Strengthening					
	< 30.5m	30.5m	45.7m	61.0m	76.2m	Non Std spans	< 30.5m	30.5m	45.7m	61.0m	76.2m	Non Std spans
No of Bridges												
Total Length												

5. Information for Table-1 and Table-2 and para 3 should be forwarded to this office ***prior to*** CBE's meeting in Board's office in April. Information required in Table 3 should be sent separately by 30/4/16.

(S K Srivastava)
Executive Director/ Civil Engg.(B&S)

C/- ED(B&S)/RDSO

C/-ED(Structures)/RDSO

C/- All CBEs

(107)

सत्यमेव जयते

रेल मंत्रालय
रेल भवन, नई दिल्ली-110001
GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)
RAIL BHAVAN, NEW DELHI-110001

No. 2015/CE-IV/ROB/76

New Delhi, Dated 04.03.2015

General Manager,
All Zonal Railways

Sub: Approval of General Arrangement Drawings (GADs) of Road Over Bridges/Road Under Bridges (ROBs/RUBs)

Ministry of Railways is focused to eliminate unmanned level crossings as well as busy manned level crossings by providing ROBs/RUBs. Although, procedure for approval of GADs in works pertaining to NHAI has been streamlined, but it is observed that in other cases like cost sharing, deposit works etc, the approval of GAD is consuming a lot of time. This results in avoidable delay in the execution of the work. Therefore, with a view to streamline the process of GAD clearance for ROBs/RUBs, following procedure should be followed:

Stage I: Before sanction of the work:

After getting a request for construction of ROB/RUB on cost sharing/deposit term, railway should prepare a Joint Feasibility Report (JFR). Sectional Sr.DEN/DEN should be the nodal officer for coordinating the joint inspection along with the sponsoring agency/State Government and concerned Dy.CE/C by fixing suitable date after mutual consultation. This exercise should be completed within two weeks time. Joint Feasibility Report should be signed by all three parties that are Sectional Sr.DEN/DEN, Dy.CE/C and sponsoring agency/State Government.

Stage II: Preparation of GAD after sanction of the work:

(i) After the work is sanctioned, either as deposit work or in the Railway Works Programme, the detailed GAD will be prepared by the Railway's executing agency (Division or Construction). The GAD should be prepared keeping in view the prevalent condition and the circulated check list

(a) Wherever the supervising/executing agency is Division, then the GAD to be signed by the concerned Sectional Sr.DEN/DEN and Sr.DEN/C for approval of CBE of the zonal railways.

(b) If the work of supervision/execution is entrusted to Construction Department, the GAD will be prepared by the concerned Dy.CE/C and duly signed by Sectional Sr.DEN/DEN and concerned Chief Engineer/Construction before sending for CBE's approval.

(ii) Generally, piers/amendment should be avoided within the railway land so that there is no hindrance to any future expansion of yard/track etc. Whenever piers/amendment is required to be located in the railway land then Sr.DOM of the division should also sign the GAD.

(iv) The executing agency should send the copies of the approved GAD to State Government/Sponsoring Agency, concerned divisional branch officers (i.e. S&T, Electrical and Operating) for preparation of the Detail Estimates as per requirement. The original GAD should be retained by the executing agency of Railways.

(v) The entire process in stage-II should be completed preferably within one month and in no case more than 45 days.

Sinha
(N. K. Sinha) 4/3
Advisor/Bridge

Copy to PCE & CAO/C of all Zonal Railways for information and necessary action

O/C

(109)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

New Delhi, Dated 29.05.2015

No.2014/CE-III/BR/Bridge Policy

Principal Chief Engineer,
All Zonal Railways

Chief Administrative Officers (Construction)
All Zonal Railways

Sub: Construction of Road Under Bridge (RUBs)

It has come to the notice of Board that at some locations there had been certain collapse of earth while carrying out the work of Road under Bridges using Box Pushing Techniques and this led to unsafe conditions. This issue has also been discussed in the recently held PCE conference on 22nd of April 2015 and it has been reiterated that Box Pushing Technique should not be resorted for providing Limited Subway/ RUB.

In view of the aforesaid, Zonal Railway is directed to construct the Road Under Bridges or Limited Height Subway preferably by using relieving girders to the extent possible and in exceptional circumstances Box Pushing Techniques should be adopted that too, with the personal approval of PCE/CAO/C concerned.

29/5/2015

(S.K. Pathak)
Executive Director/CE/B&S-II
Railway Board

Copy to:

1. Chief Bridge Engineers, All Zonal Railways,
2. ED/B&S, RDSO
3. ED/Structures, RDSO

Guard File
(110)

GOVRERMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2015/CE-IV/ROB-RUB/Misc/49 New Delhi, Dated 02.06.2015

Principal Chief Engineer,
All Zonal Railways
&
Chief Administrative Officer/Const,
All Zonal Railways

Sub: Regular meetings with State Govt. and MORTH/NHAI for expeditious construction of ROBs/RUBs

It has come to the notice of Board that regular meeting to resolve the interface issues with the various State Govt. and MORTH/NHAI regarding expeditious construction of ROBs/RUBs including ROBs/RUBs being constructed in New-Line/Doubling/Gauge Conversion Projects is not being held regularly by the Zonal Railways. Board (ME) took a serious view on this issue.

In view of the above, Zonal Railways are directed:

- to hold separate bi-monthly meetings with concerned State Govt. including their statutory authorities and MORTH/NHAI
- to issue the annual schedule (calendar) of meetings, in advance, alongwith the competency of officers to attend such meetings, so that everybody should be fully prepared for meaningful discussions during the meeting.

(S. K. Pathak) 2/6/2015
Executive Director CE/B&S-II

02/06/15

रेल मंत्रालय
Ministry of Railways
रेलवे बोर्ड/Railway Board
संलग्नक/Enclosure

(11)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No.2012/CE-IV/DFC/RSW/1(LX-ROB) New Delhi, dated 23.06.2015

Managing Director,
DFCCIL,
5th Floor, Pragati Maidan Metro Station Building Complex,
New Delhi - 110001.

Sub: Construction of ROBs/RUBs on IR and DFC routes.

Ref: i) This office letter of even number dated 13.08.2012.
ii) DFCCIL's letter No. HQ/EN/BR(ROB)/P dated 22.08.2012.
iii) DFCCIL's letter No. HQ/GM/ROB/EDFC/2013 dated 11.02.2015.

In continuation of this office letter of even number dated 13.08.2012, Ministry of Railways has decided that following provision will be applicable for Establishment charges:

- 2% for engaging PMC/GC/SHE and other consultancy service charges.
- 6% for D&G for Establishment charges.
- 1% for D&G other than Establishment charges.

Thus, total 9% provision should be made for Establishment charges for ROBs/RUBs subject to the following:

- 1% D&G charges to be passed on to Zonal Railway.
- Charges of PMC/GC/SHE and other consultancy services are not included in the estimate elsewhere as Project Construction Cost.

2. This issues with the concurrence of Finance Directorate of Ministry of Railways.

23/06/2015
(Anurag)
Dir. Civil Engg./B&S-II

Copy to:

i) The General Manager, Central Railway, Mumbai/Eastern Railway, Kolkata/East Central Railway, Hajipur/Northern Railway, New Delhi/North Central Railway, Allahabad/ North Western Railway, Jaipur/Western Railway, Churchgate, Mumbai.
ii) EDPP, EDF(X)-II, Railway Board.

(112)

GOVRERMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2015/CE-IV/ROB-RUB/Misc/49 New Delhi, Dated 25.06.2015

Joint Secretary,
Ministry of Road Transport & Highway,
1, Parliament Street,
Parivahan Bhawan,
New Delhi-110001

Sub: Bi-monthly meeting between Ministry of Railways and Ministry of Road Transport & Highways/NHAI

3rd meeting of Group of Infrastructure (GOI) was held on 09.06.2015 under the Chairmanship of Hon'ble Union Minister of Road Transport and Highways on the various interface issues requiring decisions from the Ministry of Railways.

During the meeting, GOI has decided that to resolve the interface issues between Ministry of Railways and MoRTH/NHAI regular bi-monthly meeting should be held amongst Sr. Finance and Executive officers of both the Ministries.

Executive Director CE/B&S-II and Executive Director (FX)-II from Ministry of Railways and Member Finance/NHAI along with Sr. Technical officers from MoRTH/NHAI will attend these meetings.

These meetings will be held at 11:00 hours on 20th of alternate month starting from 20th July'2015 in Room No. 140A, Rail Bhawan, New Delhi. In case the schedule date is holiday, the meeting will be held on the next working day. MoRTH/NHAI is requested to send the agenda items 15 days in advance to have meaningful discussion during the meetings.

(S. K. Pathak)
Executive Director CE/B&S-II

Copy to:

1. ED(FX)-II, Railway Board, New Delhi for information and necessary action please.
2. Member Finance/NHAI, G 5&6, Sector-10, Dwarka, New Delhi, 110075 for information and necessary action please.
3. Principal Chief Engineer & Chief Administrative Officer/Const of all Zonal Railways to submit issues related with MoRTH/NHAI, well in advance, so that these can be discussed during the meetings.

(113)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2015/CE-IV/ROB/78 New Delhi, dated 09.07.2015

Principal Chief Engineer,
All Zonal Railways

Sub: Delay in approval of General arrangement Drawings (GADs) of ROBs/RUBs submitted online by MORTH/NHAI

A web-Based portal was launched jointly by Hon'ble Minister for Railways and Hon'ble Minister for Road Transport & Highways on 10.11.2014 for online submission of GADs of ROBs/RUBs by MORTH/NHAI and their approval by Railways. The main aim of this portal is the speedy clearance of GADs (within 60 days) to avoid delay in construction of ROBs/RUBs.

Today, EDPG/MR has asked for the position and mentioned that Shri Nitin Gadkari, Hon'ble Minister of Road Transport & Highways has shown his displeasure with the present position. The position has been checked for online approval of GADs and found that so far 65 proposals have been submitted **online** by MORTH/NHAI but **not a single proposal has been approved by zonal railways.** Moreover, out of 65 cases, **41 are delayed beyond the time-limit specified for the various activities.** Railway-wise break-up of these 65 proposals is as under:

S. No.	Railways	No. of proposals received	No. of proposals delayed beyond the time-line specified for the activities
1	Central Railway	2	2
2	East Railway	2	2
3	East Central Railway	19	13
4	Northern Railway	23	14
5	North Central Railway	2	2
6	North Eastern Railway	3	1
7	Northeast Frontier Railway	2	-
8	North Western Railway	1	-
9	South Central Railway	6	4
10	South Eastern Railway	2	1
11	South Western Railway	2	1
12	Western Railway	1	1
	Total	65	41

In view of the above, you are requested to **kindly examine the proposals personally for immediate approval of all pending cases and send the feedback by 15.07.2015 positively so that Member Engineering can be apprised accordingly.**

You are also requested that, in future, all proposals submitted by MORTH/NHAI for approval of GADs of ROBs/RUBs must be monitored closely, so that proposals must be approved within specified time limit.

09/07/2015
(Anurag)

(114)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2015/CE-IV/ROB/78 New Delhi, Dated 14.07.2015

Joint Secretary (Highways),
Ministry of Road Transport & Highways,
Transport Bhavan,
1, Parliament Street,
New Delhi-110001

Sub: Third meeting of Group of Infrastructure held on 09.06.2015 chaired by the Hon'ble Minister for Road Transport & Highways and Shipping

Ref: NHAI letter No. NHAI/MF/ROB/GOI/2015 Dated 18.06.2015

Vide above reference, NHAI has approached Ministry of Railways regarding resolution of interface issues between Ministry of Railways and NHAI on certain items. These items were discussed in the meeting of Group of Infrastructure (GOI) chaired by Hon'ble Minister for Road Transport & Highways and Shipping. The decision taken during GOI has been put up to Board (ME, FC & CRB) for consideration and accordingly it has been decided as under:

(1) **Rationalisation of maintenance charges for ROBs/RUBs to be constructed totally of MORTH/NHAI cost and for which GADs submitted to Railways before 10.11.2014:**

Ministry of Railway has agreed to extend the terms and conditions contained in the MOU regarding waival of maintenance charges, instrumentation in the super-structure of railway portion of the bridge in old 155 cases enclosed as Annexure-I. In turn, MORTH/NHAI will fully fund and construct complete 39 ROBs (including Railway portion) which were sanctioned on cost sharing basis prior to signing of MOU. The list of these 39 ROBs is enclosed as Annexure-II. Accordingly, Railway will return Rs.117.86 crore which were deposited to various Zonal Railways towards the cost of maintenance charges for 155 cases as per the list enclosed.

(2) **Payment of Rs.19.82 crores to NHAI for constructing ROB on behalf of Railways (Level Crossing A-37 at km 72.039 on Rohtak-Rewari line):**

Railway will make payment of Rs. 19.82 crores for ROB built by NHAI on behalf of Railways in lieu of LC A-37 at km 72.039 on Rohtak-Rewari line on behalf of Railways.

(3) **Approval for GAD of ROBs 6 laning projects:**

NHAI has agreed for widening of 4-lane ROBs to 6-lane ROBs between Delhi - Agra, Panipat - Jalandhar and Ahmedabad - Vadodara as per the new Schedule of Dimensions (SOD). However, for 4-lane to 6-lane ROBs on the remaining railway lines, Railway is in agreement that General arrangement Drawings (GADs) would be as per standard and prevalent schedule of dimension including extension of spans as per planned scheme as applicable in the past.

This issues with the concurrence of the Finance Directorate of Ministry of Railways (Railway Board).

14/07/2015

(Anurag)
Director CE (B&S)-II

Copy to:

1. Member (Finance)/Joint Secretary, National Highway Authority of India, G-5 & 6, Sector-10, Dwarka, New Delhi-110075
2. General Manager, All Zonal Railways for kind information and necessary action please.

3. EDF(X)-II, Railway Board - for information please.

(116)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAY
(RAILWAY BOARD)

No.2015/CE-IV/ROB/78 New Delhi, Dated 15.07.2015

Minutes of Meeting held by Shri N. K. Sinha, Adviser/Bridge, Ministry of Railways, Railway Board, New Delhi on 14.7.2015

A web based portal was jointly launched by Hon'ble Minister of Railways and Hon'ble Minister of Road Transport & Highways on 10.11.2014 for on-line submission of proposal of General Arrangement Drawings (GADs) of ROBs/RUBs to be constructed by MORTH/NHAI and approval of the same by Railways. This meeting was called to review the status and to solve the problem, if any, for using this web based portal. Followings were present during the meeting:

(A) From Railways:

(i) Shri Anurag, Director CE/B&S-II, Railway Board
(ii) Shri N. Kumar, Chief Engineer/RC, Northern Railway
(iii) Shri B. P. Awasthi, Chief Engineer/TMS, Northern Railway

(B) From NHAI:

(i) Shri Satish Chandra, Member Finance, NHAI
(ii) Shri A. K. Singh, Chief General Manager, NHAI

Following was discussed during the meeting:

1. At present, there are total 72 proposals on web based portal. Out of the 72 proposals, 55 are pending with MORTH/NHAI either for fixing the date of joint inspection (14 proposals) or for submission of GADs for final approval (41 proposals). NHAI was requested to submit these GADs (41 proposals) on priority, so that the same can be approved by Railway in July 2015 itself.

2. It has been observed that after submitting the proposals, MORTH/NHAI officials are not fixing the date of joint inspection within stipulated time i.e. 5 days, resulting that the proposals are getting delayed. NHAI has been requested to monitor such cases to avoid delay.

3. Zonal Railways has reported that after joint inspection, MORTH/NHAI officials are not coming to sign the Joint Feasibility Report (JFR), resulting in delay in unloading JFR. Such proposals are getting delayed on NHAI account but reflecting pending with the Divisions on the website. Member/Finance has been requested to instruct all concerned to sign the JFR on priority, so that it can be uploaded within stipulated time (10 days after Joint Inspection). CE/TMS, Northern Railway has been asked to make necessary changes in the programme so that delay in uploading of JFR etc. can be identified.

4. It was pointed out that some duplicate proposals have been uploaded on the website. NHAI has been requested to avoid such cases in future and delete all duplicate proposals from website.

5. Sometimes, proposals are submitted by NHAI having same name of work, which is causing confusion in dealing these cases. NHAI has been requested that road chainage as well as railway chainage must be mentioned in the name of work to avoid any confusion in dealing these proposals.

6. If during the joint inspection proposal has been found not feasible, then such proposal must be deleted and if required than modified proposal should be submitted a fresh.

7. NHAI has raised the issue of approval of drawing of ROB at Borkhedi and RUB at Mankapur. Adviser/Bridge has instructed, telephonically, to CBE/Central Railway to check and approve all pending drawings, if any, on priority and give the compliance.

8. NHAI has been informed that the proposal submitted by them for waival of maintenance charges in 155 cases has been approved by Railway Board and letter has also been issued.

9. MORTH/NHAI is supposed to deposit token Plan and Estimation (P&E) charges @ Rs. 5 lakhs per case. P&E charges for all ROBs/RUBs to be constructed during the financial year to be deposited in favour of FA&CAO, Northern Railway. **But no such charges have been deposited by MORTH/NHAI so far.** Member Finance, NHAI has assured that consolidated P&E charge will be deposited by NHAI soon.

10. CE/TMS/NR has mentioned that despite several requests, NHAI has not organized the workshop to sensitize the concerned official regarding web based portal. Due to this, there is avoidable delay by NHAI in processing the cases for approval. NHAI has agreed to organize the workshop for concerned all field officers on 25.7.2015.

15/07/2015
(Anurag)
Director CE(B&S)-II

Copy to:

1. Shri Rohit Kumar Singh, Joint Secretary (Highways), MORTH, Transport Bhavan, New Delhi -10001 for information and necessary action please
2. Principal Chief Engineer, all zonal railways for information and necessary action please
3. Shri Satish Chandra, Member Finance, and Shri A. K. Singh, Chief General Manager, National Highways Authority of India, G-5 & 6, Sector-10, Dwarka, New Delhi-110075 for information and necessary action
4. Shri B. P. Awasthi, CE/TMS, Northern Railway, Baroda House New Delhi for information and necessary action please

(118)

Government of India
Ministry of Railways
Railway Board

No. 2015/CF-IV/ROB/303

New Delhi, Dated 31.08.2015

The
Principal Chief Engineer,
Central Railway CSTM
Mumbai-110001

Sub: - Drainage at station area yard/ROBs construction in Mumbai Area

During the meeting of Municipal Commissioner, Mumbai with Board (ME) on 28.08.2015, stoppage/detention of traffic due to flood in yards and station area was discussed. Municipal Commissioner informed that they have identified 45 vulnerable locations where drainage is required to be improved. It was decided to evolve an integrated drainage network so that flooding can be prevented in the Railway premises. Therefore, a proper survey needs to be conducted to provide suitable gradient. Board (ME) has desired that you should nominate a suitable Chief Engineer to identify all such vulnerable locations and monitor the survey work so that a comprehensive drainage scheme can be prepared in coordination with the Municipal Authorities. PCE to oversee the progress.

Municipal Commissioner further mentioned that a large number of ROBs are required to be constructed in Mumbai area for which adequate fund is available. CBE/WR & CBE/CR to hold a monthly meeting with the concerned Municipal Authorities to expedite the progress. The design selection of ROB should be such that which can be completed expeditiously. The RDSO designed bowstring girder or any other suitable design, as per the site requirement, may be used. Further, a web based clearance system for approval of GADs to be developed in consultation with Municipal Authorities within next 15-20 days. CE/TMS/NR will be the nodal officer for this purpose.

(N.K. Sinha)
Advisor (Bridge)
Railway Board

Copy to:-

EDCE(B&S)/RB, EDCE(B&S)II/RB for necessary action please.
CE/TMS/NR for necessary action please.

(119)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2015/CE-IV/ROB/250 (Estt. Design) New Delhi, 09.09.2015

The Principal Chief Engineer,
All Zonal Railways.

Chief Administrative Officers/Con.,
All Zonal Railways.

Sub: Typical General Arrangement Drawing of ROB-cum-LHS.

Please find enclosed a typical General Arrangement Drawing of integrated ROB cum LHS prepared and used by Construction Organisation, Northern Railway alongwith its salient features.

2. This arrangement of LHS as integral part of ROB will help in closure of Level crossings after construction of ROB which at present is a difficult task due to resistance of local people in the absence of crossing facility for the pedestrians. This arrangement will further reduce the requirement of footpath in super-structure along with attached staircases.

3. Zonal Railways are advised to adopt the typical GAD of integrated ROB-cum-LHS with necessary modification, if any, based on site feasibility.

4. RDSO may study the GAD and Zonal Railways may furnish their comments to RDSO for further improvement, if any. After study and review, the standardized GAD may be circulated by RDSO.

DA: As above

09.09.15
(S.C.Jain)
Executive Director (B&S)-II
Railway Board

Copy to:

Executive Director (B&S), RDSO, Lucknow – for appropriate action.

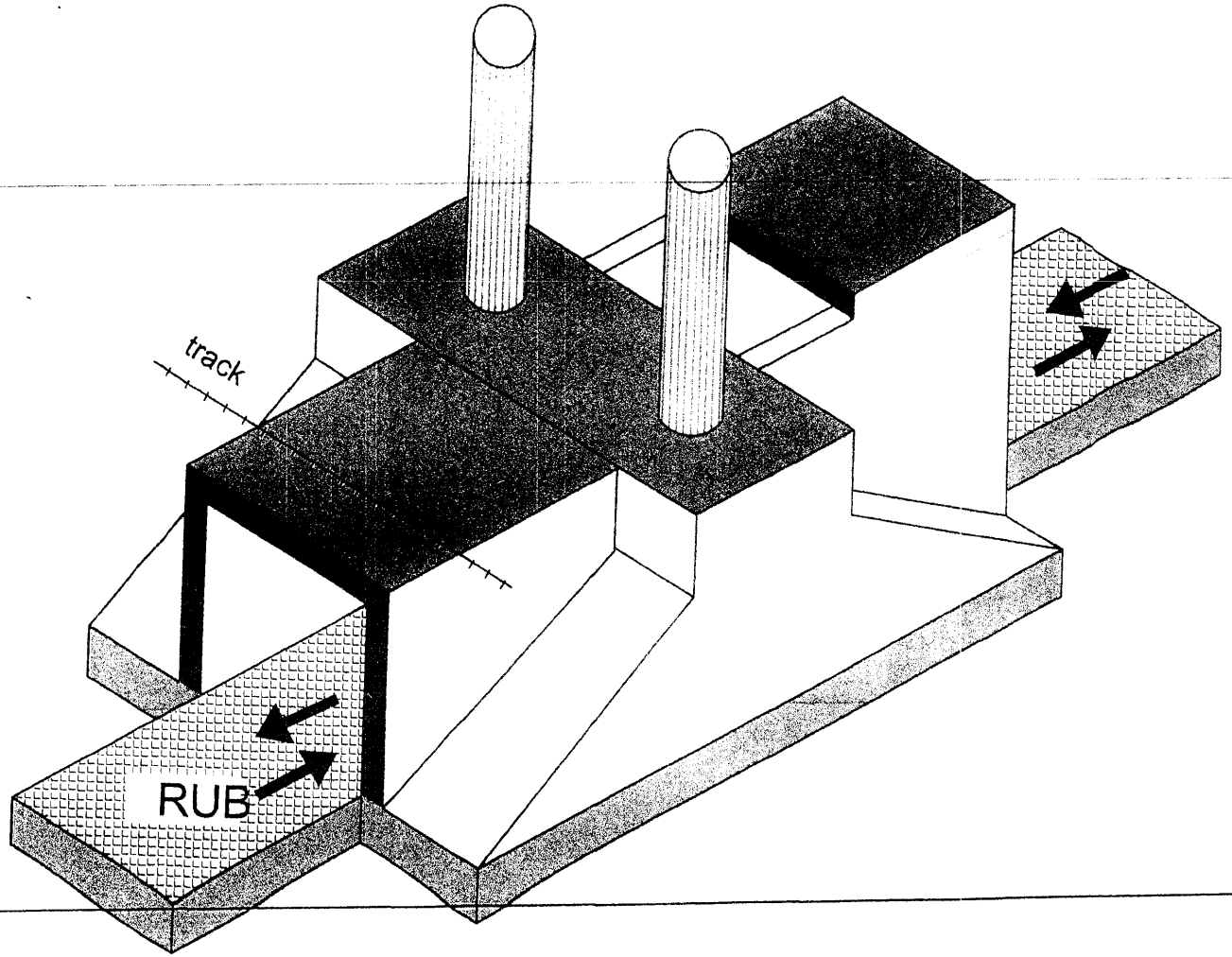
SALIENT FEATURES OF ROB ON SONIPAT BY PASS

1. Span arrangement = 2x15.169M(SK)+1x21.359(SK)
2. Subway is an integral part of ROB foundation
3. Footpaths(2Nos.) and staircases (4 Nos.) have been removed
4. Gradient has been given in the subway to reduce the approach length.
5. Land has been saved due to:
   (i) Integrated RUB inside the footing,
   (ii) Removal of staircase on both sides,
   (iii) Removal of footpath on both sides at superstructure.
6. This subway is covered by super structure throughout the length, which will prevent falling of rain water into it. Any size of subway may also be provided as per site requirement.
7. The base slab and some part of walls have been saved by providing subway in the ROB foundation.
8. Openings in the top slab for air ventilation and light have been provided near middle piers.
9. This arrangement of LHS as an integral part of ROB will help in closure of L-xing after construction of ROB which is a difficult task otherwise.
10. It will be easy and attractive to the local habitants to use LHS due to less steps of RUB in comparison to steps normally provided for footpath at top.

SAVING DUE TO INBUILT RUB IN ROB FOUNDATION

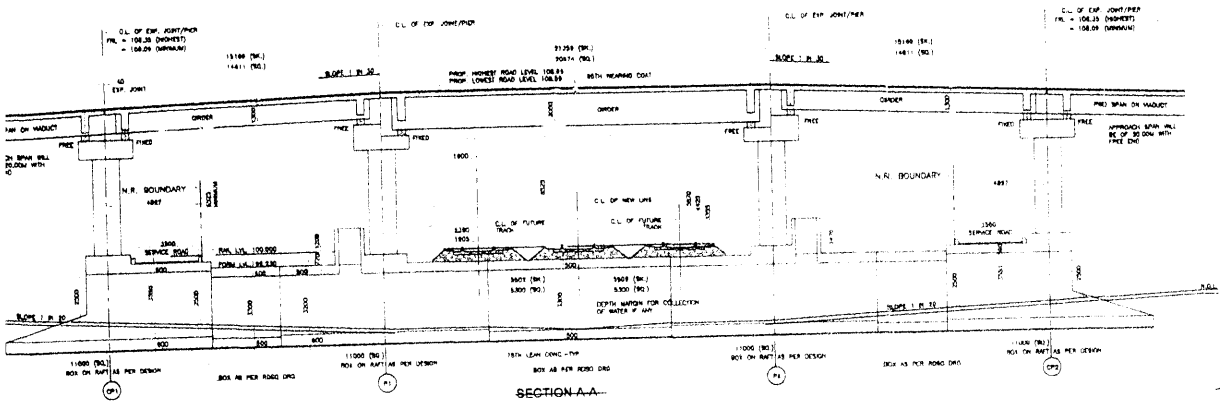
1.	SAVING OF CONCRETE IN SUPERSTRUCTURE & STAIRCASES: Due to removal of two foot paths and staircases	33 Lakhs
2.	SAVING OF CONCRETE IN SUBSTRUCTURE : Due to less width of super structure & its corresponding load.	22 Lakhs
3..	SAVING IN ONE GIRDER : Due to removal of two foot paths and its railing.	65 Lakhs
4.	SAVING IN STEEL RAILING ON FOOTPATH & STAIRCASE: Due to removal of footpath and 04 nos of staircase.	16 Lakhs

INNOVATION BY DESIGN OFFICE OF
NORTHERN RAILWAY CONSTRUCTION ORGANITATION

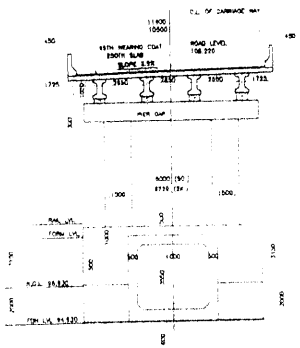


TYPICAL PRESPECTIVE VIEW AT PIER LOCATION
HAVING RUB INSIDE FOUNDATION OF ROB

1x1

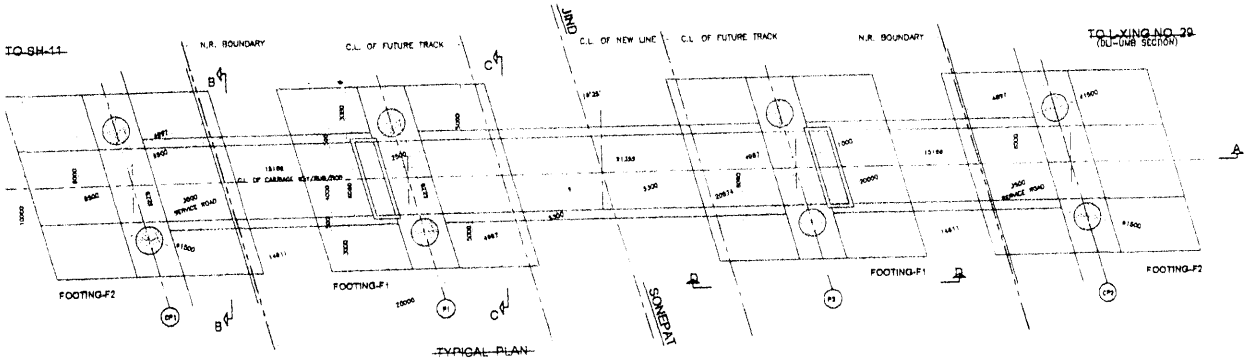


SECTION A-A

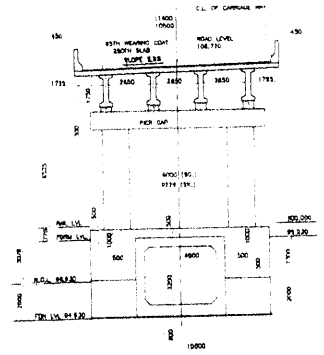


SECTION B-B

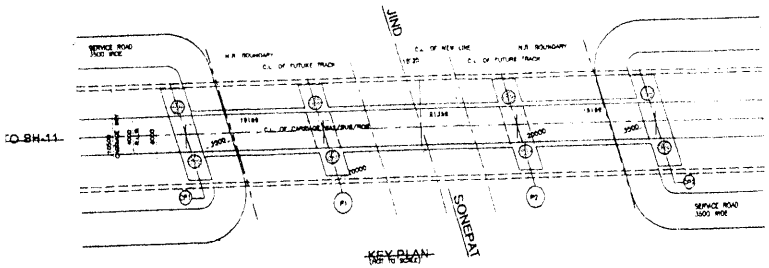
NOTES :-



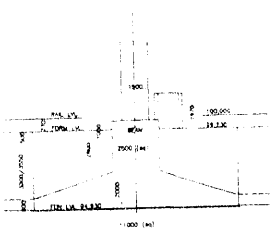
TYPICAL PLAN



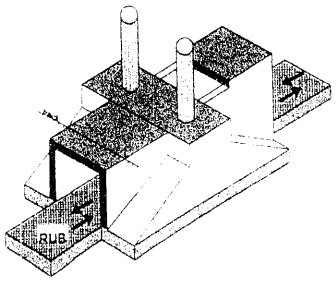
SECTION C-C



KEY PLAN



SECTION D-D



TYP. PRESPECTIVE VIEW AT PIER LOCATION

SN.	DATE	DESCRIPTION	SIGN

REVISIONS

NORTHERN RAILWAY

CAO/C OFFICE, K GATE, DELHI

PROJECT :-

ROAD OVER BRIDGE AT KM 85/796-797 JIND-SNP SEC. OVER SONEPAT BYE-PASS BETWEEN MOHANAA-SONEPAT IN C/W JIND - SONEPAT NEW LINE.
SPAN 1x21.359 + 2x15.159 C/C PIER

DETAILED DIMENSION DRG.

SCALE : 1:100 UNLESS MENTIONED

CASE NO. :-

CALCULATION NO. :-

NRHQE(P) PLAN NO. :- R-830-RB/2014 SH.-1

-sd-	-sd-	-sd-	
-sd-	-sd-	-sd-	

	RT. BARUAH NATH	PAWAN KUMAR	YOGESH KR RAHAUN
	SSE/C/DRG	SSE/C/ROB	SSE/C/DESIGN

THE EXISTING LAYOUT AND FEASIBILITY OF THE PROPOSAL HAS BEEN CHECKED AT SITE AND FOUND FEASIBLE

-sd-	-sd-	-sd-	-sd-
JE/W/C/DOHANA	AEN/C-I/DSB	SE/P.WAY/BWP	HOD/P.WAY/BWP

(123)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No.2015/CE-IV/Misc/86 New Delhi, Dated 10.09.2015

Principal Chief Engineer
All Zonal Railways

Chief Administrative Officer (C)
All Zonal Railways

Sub: Review Meeting by Member Engineering, Railway Board

During Review Meeting of CAO/Cs and PCEs of Zonal Railways held by Member Engineering on 9th & 10th September 2015, following instructions have been given:

(i) No piles should be provided in the ROB works. The confirmation of not providing the board piles in the ROB works should be sent to Railway Board within a week's time.

(ii) Action plan for providing Automatic Banner Flag at the manned non-interlocked gate should be prepared and sent to Board's Office within a week's time.

(iii) All Zonal Railways should issue Identity Card with the photo to all the Gatemen. I-Card should be numbered and record should be maintained at the Divisional level. The sample I-Card should be prepared by Zonal Railway. The I-Card should be signed by 2 officials including one from Engineering Department and other from RPF or Personnel. The confirmation of issuing numbered I-Card should be sent to Board's office by **15-10-2015**.

Please treat the matter as **'Urgent'**.

10.09.15

(S. C. JAIN)
Executive Director CE/B&S-II
Email: edbsrb@gmail.com

(124)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2015/CE-IV/ROB/76 New Delhi, Dated 17.11.2015

Principal Chief Engineer,
All Zonal Railways
&
Chief Administrative Officer (Constn),
All Zonal Railways

Sub: Approval of General Arrangement Drawings (GADs) of Road Over Bridges/Road under Bridges (ROBs/RUBs)

Ref: Advisor/Bridge, Railway Board Letter No. 2015/CE-IV/ROB/76 dated 04.03.2015

Vide letter referred above, it was advised that generally piers and abutments should be avoided within the Railway boundary, so that there is no hindrance to any future expansion of yard/track etc. However, it has been observed that some of the Zonal Railways are adopting single span to cover the entire railway land even if the width of Railway boundary is very high. The adoption of such longer span may lead to un-economical construction of ROB. In view of this, it is advised that in such cases where the width of the railway boundary is very high, multiple spans may be considered based on techno-economical consideration keeping provision of multiple tracks under one span.

17.11.15

(S. C. JAIN)
Executive Director CE/B&S-II

(125)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No.2006/CE-IV/Misc/2(RUB) Pt.2 **New Delhi, Dated 24.11.2015**

General Manager,
All Zonal Railways.

Sub: Clarification on Provision of Subways/RUBs in lieu of Level Crossings.

Ref: This office's letter No.2006/CE-IV/Misc-2 (RUBs) dated 18-04-2012

In various forums, Public Representatives have raised the issue regarding problem of less vertical clearance and water logging in subways being constructed for elimination of level crossings. Vide above reference, instructions were issued that the level crossings, which do not qualify for sanction of RUB on cost sharing basis in terms of Para 925 of IRPWM, can be planned for elimination by subways, if technically feasible and vertical clearance of such subways can be upto 5.0 meter. It was also mentioned that the responsibility for maintenance of roads passing through subways, lighting, **drainage system**, diversion road and any other allied works, will rest on State Govt.

In view of the issues raised by Public Representatives, it is further clarified that the height of subway should be decided on the basis of road traffic including seasonal traffic plying on the level crossing to avoid any inconvenience to road users. Moreover, issue of vertical clearance of subways and drainage arrangement should be finalised along with the State Authorities at the time of finalisation of General Arrangement Drawing (GAD).

Jain 26.11.15

(S.C. Jain)
Executive Director CE(B&S)II

Copy to:

(i) Principal Chief Engineer, All Zonal Railways
(ii) Chief Administrative Officer(C), All Zonal Railways

(126)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No.2012/CE-IV/Misc.54/Pt-III

New Delhi, dated 04.12.2015

Managing Director,
Konkan Railway Corporation Ltd,
Belapur Bhawan, Sector-11,
P. O. Box No. 9,
CBD Belapur,
Navi Mumbai – 400 614.

Sub: Construction of ROBs/RUBs on cost sharing basis on KRCL route.
Ref: i) Railway Board's letter No.2011/Infra/18/2 Pt.II dated 02.07.2012.
ii) Railway Board's letter No. 2015/Infra/18/6 dated 02.11.2015.

Five works of construction of ROBs in lieu of LC Nos 43, 44, 45, 46 & 47 on KRCL route were sanctioned on cost-sharing basis in the year 2012-13 under South Western Railway. KRCL is requesting Railway Board to transfer these works to KRCL for execution on turnkey basis.

2. These 5 LCs are located on KRCL route and as per existing instructions referred at (i) above (Copy enclosed), Capital Investment for infrastructure development (like capacity enhancement and safety related works) on SPV lines, all infrastructure related capital investment during the course of concession period, which are not covered under the existing concession agreement are to be made by the SPV since the benefit of these investments are reaped by the SPV by way of higher throughput leading to higher revenue share. As such, ROBs in lieu of these 5 LCs are to be constructed by KRCL itself and Railway's share of cost of ROBs should be borne by KRCL.

3. The issue has been examined by Board (ME, FC & CRB) and instructions have been issued vide letter referred at (ii) above (Copy enclosed). It has been decided that "As the ownership as well as operation and maintenance responsibility of SPV line is vested with SPVs, logically the role of Railways devolves on SPVs. The cost of the Railway's share for the ROB/RUB should be borne by the SPVs. In case some of the SPVs are cash strapped and cannot find the fund, Railways may use CRF to take up these projects along with State's share. Railway's share shall be deemed as an advance which could be recovered from the SPV in 5-10 instalments depending on the amount and the ability of SPV to pay".

4. Accordingly, it is advised that all Road Safety Works on KRCL lines should be done by KRCL and Railway's share of cost of ROBs/RUBs should be borne by KRCL in accordance with instructions issued vide Railway Board's letter No. 2015/Infra/18/6 dated 02.11.2015.

04.12.15

(S C Jain)
Executive Director Civil Engg./B&S-II

DA: As Above.

Copy to: Principal Chief Engineer, SW Railway in reference of CBE/SWR's letter No. SWR/W.352/RB/41135 dated 08.11.2012.

(127

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No.2015/CE-IV/LX/289(Automatic Banner Flag) New Delhi, dated 07.12.2015

Principal Chief Engineer,
All Zonal Railways.

Sub: Automatic Banner Flag on Non-Interlocked Manned Level Crossing

Ref: (i) This office letter No.2014/CE-II/TK/8 dated 25-06-2015
(ii) This office letter No.2015/CE-IV/Misc/86 dated 10-09-2015

Vide above referred letters, Zonal Railways were instructed to provide Automatic Banner Flag as per RDSO Drawing No.RDSO/T-8416 on some of the Non-Interlocked Manned Level Crossings for field trial and send quarterly feedback/performance to RDSO so that the said drawing can be standardized for regular adoption. RDSO has informed that no feedback has been received so far from any Zonal Railways.

During the Review Meeting of CAOs and PCEs, held by Board (ME) on 9th and 10th Sept 2015, the action plan for providing Automatic banner flags **on all Non-Interlocked Manned Level Crossing** was asked within a week's time but till date none of the Zonal Railways has submitted the action plan. **Board (ME) has taken a serious view of it.**

Some of the Zonal Railways have sent the proposals for providing Automatic Banner Flags on Non-Interlocked Manned Level Crossings for their inclusion in Railway Works Programme 2016-17. During the scrutiny of the proposals, it has been observed that the average cost of providing Automatic Banner Flags is ranging from Rs.0.26 lakh to Rs.2.0 lakh per Level Crossing. As the provision of Automatic Banner Flags on Non-Interlocked Manned Level Crossing gates is a safety item and has already been delayed, so necessary works, if required, should be got sanctioned in the Zonal Railways power immediately and **Automatic Banner Flags on Non-Interlocked Manned Level Crossing gates with TVU more than 10,000 should be provided within next 3 months' time and on the remaining LCs within six months.**

The action plan for providing the same should be submitted to Railway Board in the following proforma:

(A) Action plan for providing Automatic Banner Flags on Non-Interlocked Manned Level Crossings having TVU more than 10,000:

SN	Railway	No. of LCs	No. of such LCs where Automatic Banner Flags have already been provided	Month wise planning for providing Automatic Banner Flags within next 3 months

(B) Action plan for providing Automatic Banner Flags on Non-Interlocked Manned Level Crossings having TVU less than 10,000:

SN	Railway	No. of LCs	No. of such LCs where Automatic Banner Flags have already been provided	Month wise planning for providing Automatic Banner Flags within next 6 months

The above details should be sent to this office by **18.12.2015** positively for kind perusal of Board (ME). This information should also be submitted through email also in MS excel on email id **edbsrb@gmail.com**.

The matter may be treated as **URGENT**.

128

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No.2015/CE-IV/ROB/78(Pt) New Delhi, dated 10.02.2016

General Manager,
E.C.Railway, Patna
Northern Railway, New Delhi
N.F. Railway, Guwahadi
Southern Railway, Chennai
South Central Railway, Secunderabad
South Eastern Railway, Kolkata

Sub: Approval of GADs for the Construction of ROBs/RUBs on NH Corridor.

Ref: Railway Board's letter No.98/CE-I/Misc//14/NRO/Pt dated 10.11.2014.

Vide letter referred above, the details of MOU signed between the Ministry of Road Transport & Highways/NHAI and Railways were issued. Also a Web-based Portal was launched for approval of General Arrangement Drawing (GAD) within 60 days. The web based portal is being monitored at the highest level in the Railway Board.

From the review of the pending cases for approval of GAD for construction of ROBs by NHAI/MORTH, it has been observed that scheduled time limit is not being followed. In Northern Railway, GADs are pending in HQRS for final approval for more than 30 days although only 8 days are permitted. In some of the Zonal Railways, approval of GADs in Division is taking more than 100 days as against permitted 7 days.

It is therefore requested that concerned officials may be directed to ensure that GADs of ROBs being constructed by MORTH/NHAI should be approved as per laid down schedule.

Ministry of Railways
Railway Board
Enclosure
Signature 12/02/16

o/c

(R. K. Goyal)
Advisor (Bridge)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

129

No.2015/CE-IV/RUB/206

New Delhi, dated 15.02.2016

Principal Chief Engineers,
All Zonal Railways

Chief Administrative Office(C),
All Zonal Railways

Sub: Special Conditions for working of Road Cranes

It has been observed that large number of ROBs/RUBs/Subway works are in progress and launching of ROBs/RUBs/Subways are being done with the help of Road Cranes. But it has been observed that sometimes Road Cranes with suitable capacity and having valid Certificate about safe condition of Road Cranes are not being used and it is leading to unsafe conditions.

In view of this, it is decided that the following condition should be incorporated in all future tender conditions:

1. No machine shall be selected to do any lifting on a specific job until its size and characteristics are considered against the weights, dimensions and lift radii of the heaviest and largest loads.

2. The contractor shall ensure that a valid Certificate of Fitness is available before use of Road Cranes.

3. Contractors can utilise the services of any competent person as defined in Factories Act, 1948 and approved by Chief Inspector of Factories.

4. The laminated photocopies of fitness certificate issued by competent person, the operators' photo, manufacturer's load chart and competency certificate shall always be either kept in the operator cabin or pasted on the visible surface of the lifting appliances.

5. All lifting appliances including all parts and gears thereof, whether fixed or movable shall be thoroughly tested and examined by a competent person once at least in every six months or after it has undergone any alterations or repairs liable to affect its strength or stability.

In addition, it is also advised that for all the works being executed by the Road Cranes, the above stipulations should be checked. **These instructions should be strictly observed.**

15.02.16
(S. C. JAIN)
Executive Director CE/B&S-II

(130)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAY
RAILWAY BOARD

No.2015/CE-IV/ROB-RUB/Misc/49 New Delhi Dated 22.03.2016

Principal Chief Engineers,
All Zonal Railways

Chief Administrative Officers/Con,
All Zonal Railways

Sub: Type of Foundation for ROBs being constructed by MORTH/NHAI

Ref: (i) This office's letter No. 2014/CE-IV/ROB/250(Estt.Design) dated 05.09.2014

(ii) This office's letter No. 2015/CE-IV/Misc/86 dated 10.09.2015

Fourth Meeting of Group of Infrastructure chaired by Hon'ble Minister (RT&H, S) was held on 17.03.2016 and the same was attended by Hon'ble Minister of Railways. To discuss the interface issues between Ministry of Railways and MoRTH/NHAI, a meeting was further held in Railway Board on 21.03.2016.

Vide letters referred above, it was decided to adopt the open foundation in place of pile foundation in the construction of ROBs, as open foundations are economical and faster with respect to pile foundation. Further, Chief Administrative Officer/Const. and Principal Chief Engineer have been authorised to adopt pile foundation depending upon the site conditions, site constraints etc.

The issue of adoption of pile foundation instead of open foundation by MoRTH/NHAI was discussed during the Fourth Meeting of Group of Infrastructures held on 17.03.2016. It was advised in the meeting by MoRTH/NHAI that 100% funding of ROBs being constructed by MoRTH/NHAI is being done by them, hence, the type of foundation to be adopted for the ROBs being constructed by MoRTH/NHAI should be taken by MoRTH/NHAI themselves.

In view of above, it is decided that type of foundation for the ROBs being executed by MORTH/NHAI at their own cost should be decided by MoRTH/NHAI.

22.03.16

(S. C. JAIN)
Executive Director CE/B&S-II

S.A.-5

131

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No.2015/CE-IV/ROB /78 **New Delhi, dated 30.03.2016**

The General Managers,
All Zonal Railways

Sub: Approval of GADs for the Construction of ROBs/RUBs on NH Corridor.

Ref: Railway Board's letter No.98/CE-I/Misc/14/NRO/Pt dated 10.11.2014

Vide letter referred above, the details of MOU signed between the Ministry of Road Transport and Highways/NHAI and Railways were issued. Also a Web-based Portal was launched for approval of General Arrangement Drawing (GAD) within 60 days. The web-based portal is being monitored at the highest level in the Railway Board.

The Fourth Meeting of Group of Infrastructure was held on 17.03.2016, chaired by **Hon'ble Minister (RT&H,S) and attended by Hon'ble Minister of Railways**.

The issue of pending cases for approval of GAD for construction of ROB by MORTH/NHAI was discussed and Hon'ble Minister (RT&H, s) has criticized the Railways for delay in approval of GADs. From the review of the pending cases for approval of GADs, it has been observed that in some of the Zonal Railways, divisions are taking more than 40-50 days for signing the GADs against the prescribed 7 days. Hon'ble Minister of Railways has taken a serious view of non-adhering the schedule time of approval of GADs.

It is therefore requested that concern officials may be directed to ensure that GADs of ROBs being constructed by MORTH/NHAI should be approved as per laid down schedule.

(R.K.Goyal)
Adv.(Bridge)
Railway Board

01/04/16

उत्तर रेलवे कार्यालय
प्रेषित
16 APR 2015
बड़ौदा हाउस, नई दिल्ली

T-7 (133)

Office of Chief Engineer (TMS)

उत्तर रेलवे/NORTHERN RAILWAY
प्रधान कार्यालय/Headquarter Office,
बड़ौदा हाउस/Baroda House,
नई दिल्ली/New Delhi.
दूरभाष/Phone : 011-23073257

सं०/No. 198-W/e-Gov/TMS/IR-Implmnt/Pt-II

दिनाँक/Date: 15.04.2015

By Post.

Principal Chief Engineer (s),

1. Central Railway, CST, Mumbai-400001
2. East Central Railway, Hajipur Bihar-844101.
3. East Coast Railway, Bhubaneswar -364001
4. Eastern Railway, Fairly place, Kolkata 700 001
5. North Central Railway, Allahabad- 211001
6. North East Frontier Railway, Maligaon, Guwahati 78101
7. North Eastern Railway, Gorakhpur-273012
8. North Western Railway, Jaipur- 302017
9. Northern Railway, Baroda House, New Delhi.
10. South Central Railway, Rail Nilayam, Secunderabad-503721.
11. South East Central Railway, Bilaspur-495004
12. South Eastern Railway, Garden Reach, Kolkota
13. South Western Railway, Hubli-580027
14. Southern Railway, Park Town, Chhenai-600003
15. West Central Railway, Jabalpur-482001
16. Western Railway, Church Gate, Mumbai- 400020

विषय/Sub: Implementation of Track Management System (TMS) in **40 Divisions of Indian Railways**

संदर्भ/Ref: 1) Railway Board letter no. 2009/TMS/2/CRIS/Meetings dated 10.02.2015
2) Railway Board letter no. 2009/TMS/2/CRIS/Meetings dated 12.04.2012, 31.05.2012, 18.01.2013, 08.04.2013
3) Railway Board letter no. 2009/TMS/4/Rly/Progress dated 09.05.2013
4) Railway Board Letter no. 88/Track-III/TK/81 Vol. V dated 25.02.2011.
5) Railway Board letter no. 2009/TMS/2/CRIS/Meetings dated 14.03.2011
6) This office letter of even no. 08.05.2012, 04.02.2013, 08.02.2013, 08.04.2013 and 17.05.2013
7) This office letter no. 198-W/e-Gov./TMS/Estimate dated 11.04.2011.

Track Management System (TMS) has been commissioned in 28 divisions of Indian Railways. Further, Railway Board had approved the Implementation of

134

TMS in remaining 40 divisions of Indian Railways vide Ref-2 & 3. Details of various divisions are as under.

SN.	Railway	Divisions where TMS is Commissioned (28 divisions)	**Divisions where TMS has to be implemented (40 divisions)**
1.	CR	Bhusaval	Mumbai (CST), Nagpur, Pune, Sholapur
2.	ECoR	Sambalpur, Waltair	Khurda Road
3.	ECR	Mughal Sarai	Danapur, Dhanbad, Sonepur, Samstipur.
4.	ER	Asansol	Malda, Howrah, Sealdah.
5.	NCR	Agra	Allahabad, Jhansi
6.	NER		Izatnagar, Lucknow, Varanasi.
7.	NFR	Alipurduar	Katihar, Lumbding, Tinsukiya, Rangiya.
8.	NR	Ambala, Delhi, Firozpur, Lucknow, Moradabad.	
9.	NWR		Ajmer, Bikaner, Jaipur, Jodhpur.
10.	SCR	Guntakal, Guntur, Hyderabad, Nanded, Secunderabad, Vijayawada	
11.	SECR	Bilaspur, Nagpur, Raipur	
12.	SER	Adra, Chakradharpur, Ranchi	Kharagpur
13.	SR	Salem	Chennai, Madurai, Palakkad, Thiruvananthapuram, Tiruchchirappalli.
14.	SWR	Banglore	Hubli, Mysore
15.	WCR	Kota	Bhopal, Jabalpur
16.	WR	Ratlam	Ahmedabad, Bhavnagar, Mumbai Central, Rajkot, Vadodara.

Detailed estimate for the work of "*Implementation of Track Management System (TMS) on Railways*" was sanctioned by Railway Board and circulated vide Ref- 4 & 7 and is available on TMS website.

All the Zonal Railways were informed vide Ref- 6 & 7 regarding preparatory action to be taken for implementation of TMS. Railway/Divisions must have completed the preparatory works accordingly. These are again detailed below and Railways may check and confirm compliance.

1. **Internet connectivities to field officials : (a)** Land line based broad band internet connections in the office of SSEs & ADENs of P.Way, USFD & Bridge and **(b)** HSIA (High Speed Internet Access) Wireless broad band data card to JEs, SSEs, & ADENs of P.Way, USFD, Bridge & TMS units (in division) office. Sanction of Railway Board already exists for it and the

detailed estimate sanctioned by Board also has provision for this for initial 12 months, thereafter railway will charge it to their revenue head. Debits for initial 12 months expenditure can be raised to Northern Railway. If negotiated properly with service provider (e.g. BSNL/MTNL for land line broad band connection; Tata Photon+ / Reliance+ / MTS etc. for HSIA data card etc.) they will not charge installation/hardware cost and monthly/yearly charges are also discounted with respect to market price. These connectivities should be provided on priority.

2. Various **Start Up Items** for implementation of TMS in the division along with proforma for monitoring the progress of the same is attached herewith as Annexure-1. Compliance of Various items may be sent accordingly.

3. It is expected that all SSE (Incharge) and ADENs of P.Way, USFD have PC and printer in their offices. If any such offices need to be provided, the Division/Railway have to do the same from their own funds/resources.

4. Netbooks are being procured and provided by CRIS for various field officials and will be distributed to the concerning divisions. These will be provided for JEs(Sectional) and SSEs/SEs(Incharges) of P.Way(field), USFD, bridge (field), TMS unit (in division office) and Track Machines. Detailed list of TMS User Officials for these 40 divisions have already been sent by Zonal Railways to this office and necessary action is being taken accordingly. These netbooks are expected to be provided by CRIS in May' 2015.

5. Special attention should be given to the km length, location marking system, importance of correct chainage for preparing initial asset master data and for subsequent TMS usage. Same is explained below.

   a) Correct location (chainage) in km.m etc as applicable is very important in TMS. For various features and assets it has to be measured correctly.

   b) Actual length (in metre) of every Kilometre has to be measured and fed in TMS.

   c) In electrified lines correct chainage of each OHE mast is to be measured, fed in TMS and painted on OHE mast.

   d) In non-electrified lines, Hectometre posts are to be fixed at every 100m. Number of hectometer posts will be less or more than 9 depending upon the actual length of KM. Location of hectometer posts to be checked and corrected accordingly.

   e) For correct measurement of chainage mentioned above and for chainage of various track assets division may use "Rodometer" or similar equipment manufactured by trade (Freeman, etc). This will make correct measurement very convenient otherwise correct measurement using "Measuring Tape" is tedious and time consuming work.

   f) Paint mark at every 10m or 20 m on outside of rail can be marked for facilitating correct chainage measurement of various assets for initial master asset data entry.

g) Correct chainage measurement should be done in loopline and sidings as explained in FAQ on TMS website home page. FAQ →Asset→Loopline. Jurisdiction of loopline should be defined. Chainage of loop/siding be measured along the loop line/siding track starting from 0 m from the ATS of Turnout from which loop/siding takes off up to the ATS of turnout/dead end where it ends.

h) Correct identification of Left & Right Rail is very important in view of Railway Board letter no. 2009/TMS/3/Rly/Meetings Dt. 01.11.2011; it can be downloaded from TMS website page by clicking Miscellaneous Menu --> Circulars --> RB Circulars and other important instructions. It is as : ***"With a view to have uniformity in all the Railways and to have permanent reference, Board (ME) has decided that direction of increasing kilometer be used in Railways for determining left/right rail/ directions/side for all sections"***.

6. Training / exposure schedule for various divisions/Hq. is as under :

a) Workshops have been conducted at the HQ level and in IRICEN to familiarize various Railway officials to TMS.

b) Divisional resource pool, comprising of 3 supervisors and 2 officers including Sr. DEN/C, has been trained in CRIS/Delhi. However, if any additional resource pool member of any division needs to be trained they should be sent to CRIS.

c) CRIS will conduct at least two rounds of trainings covering each and every officer/supervisor of division. Each round will be of four days. Once after completion of Master Asset data entry and receiving of netbooks from CRIS and once after about one month of usage. Two trainers of CRIS will visit division for four days for each round for the same. Division will arrange the required infrastructure of meeting hall, projector, etc. Dates for the same will be decided in consultation with railway/division.

d) Subsequently, trainings will be arranged through CRIS as per the need assessed during inspections.

In view of the Railway Board's latest direction (Ref-1), concerning railways are requested to take urgent action as detailed above so as to ensure commissioning of TMS in these 40 divisions preferably by **31.05.2015** and latest by **30.06.2015**.

D.A.: Three pages as mentioned above.

15/4/2015

(B.P.Awasthi)
Chief Engineer/TMS

Copy: 1) Additional Member (CE), Railway Board for kind information.
2) Executive Director/CE (P), Railway Board for kind information.
3) MD/CRIS, Chankyapuri, New Delhi for kind information and necessary action.

~~8-4-15~~

137

_____Railway

_____Division

Annexure 1

Implementation/Commissioning of Track Management System (TMS) on 40 Divisions

SN.	TMS Item	Unit	Scope	Prog.	To be done by	Remarks
1	Initial exposure of officials to computer usage(for computer illiterates only)	Nos.			Div.	
2	Training of Divisional resource pool, System & Divisional Administrator	Nos.			CRIS	Completed
3	a) Initial data entry of Routes, Sections, stations by divisional resource pool	% age			Div.	
	b) Initial jurisdictional data entry including All Lines by Divisional resource pool	% age			Div.	
	c) Initial jurisdictional data entry of all Loop lines/Sidings	Nos.			Div.	
4	Chainage Marking Systems					
(i)	Survey and entry of Actual length of Kms	Km			Div.	
(ii)	Painting of CORRECT chainage on OHE mast in electrified section and data entry in TMS	Km			Div.	
(iii)	Fixing of hectometer posts at correct locations(@ 100m) in Non-Electrified section	Km			Div.	
5	PCs for					
(i)	ADENs Office	No.			Div.	
(ii)	SSEs Office	No.			Div.	
6	Net Books for JE and SSE	No.			CRIS	Expected in May'2015
7	Provision of Internet connectivity					
(i)	Landline Broadband Internet (ADEN & SE/SSE office) with Wi-Fi modem	Nos.			Div.	
(ii)	Wireless HSIA Internet (ADEN,SE/SSE & JE)	Nos.			Div.	
8	Collection and entry of asset data (by JE/SE (P.Way)					
(i)	Rail	Km			Div.	
(ii)	Sleepers	Km			Div.	
(iii)	Ballast	Km			Div.	
(iv)	Curves	Nos.			Div.	
(v)	Level Crossings	Nos.			Div.	

(vi)	Points & crossings	Nos.			Div.	
(vii)	Bridges	Nos.			Div.	
(viii)	LWRs/SEJs	Km			Div.	
(ix)	Welds (AT,FBWs)	Km/No			Div.	
(x)	Joints (GJ, FP)	Km			Div.	
(xi)	Gang Beats	Km			Div.	
(xii)	Sand Humps	Nos.			Div.	
(xiii)	For Loops (all track components)	Km			Div.	
(xiv)	For Sidings (all track components)	Km			Div.	
(xv)	Other assets				Div.	
9	Verification of Data					
(i)	ADENs	%age	100%		Div.	
(ii)	DENs/Sr. DENs	%age	10%		Div.	
10	Training/ exposure to TMS of all P.Way officials by divisional resource pool & CRIS	Nos.			CRIS, IRICEN, Div.	Done in HQ & IRICEN
11	Entry of Last Inspections in TMS from Inspection Register (by JE/SSE (P.Way)		To be done after supply of Netbooks		Div.	
12	Entry of Land Items					
(i)	Land Boundary by JE/SE (P.Way)	Km			Div.	
13	Yard plan uploading	Nos.			Div.	
14	Uploading of TRC Recordings- 4 for each section (by Sr.DEN/C)	Nos.			Div.	
15	Uploading of OMS Recording- 4 for each section (by Sr.DEN/C)	Nos.			Div.	

Precautions:

Special attention should be given to the km length, location marking system, importance of correct chainage for preparing initial asset master data and for subsequent TMS usage. **Same is explained below**.

a) Correct location (chainage) in km.m etc as applicable is very important in TMS. For various features and assets it has to be measured correctly.

b) Actual length (in metre) of every Kilometre has to be measured and fed in TMS.

c) In electrified lines correct chainage of each OHE mast is to be measured, fed in TMS and painted on OHE mast.

d) In non-electrified lines, Hectometre posts are to be fixed at every 100m. Number of hectometer posts will be less or more than 9 depending upon the actual length of KM. Location of hectometer posts to be checked and corrected accordingly.

e) For correct measurement of chainage mentioned above and for chainage of various track assets division may use "Rodometer" or similar equipment manufactured by trade (Freeman, etc). This will make correct measurement very convenient otherwise correct measurement using "Measuring Tape" is tedious and time consuming work.

f) Paint mark at every 10m or 20 m on outside of rail can be marked for facilitating correct chainage measurement of various assets for initial master asset data entry.

g) Correct chainage measurement should be done in loopline and sidings as explained in FAQ on TMS website home page. FAQ--> Asset--> Loopline. Jurisdiction of loopline should be defined. Chainage of loop/siding be measured along the loop line/siding track starting from 0 m from the ATS of Turnout from which loop/siding takes off up to the ATS of turnout/dead end where it ends.

h) Correct identification of Left & Right Rail is very important in view of Railway Board letter no. 2009/TMS/3/Rly/Meetings Dt. 01.11.2011; it can be downloaded from TMS website page by clicking Miscellaneous Menu -->Circulars--> RB Circulars and other important instructions. It is as : ***"With a view to have uniformity in all the Railways and to have permanent reference, Board (ME) has decided that direction of increasing kilometer be used in Railways for determining left/right rail/ directions/side for all sections"***.

*****

15/4/15

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. Track/21/2004/0902/7/Vol.II

New Delhi, dated 22.04.15.

Principal Chief Engineers
All Indian Railways.

Sub: Tenders for outsourcing of USFD testing of Rails/Welds by Zonal Railways.

Ref: (i) CTE/WCR's letter no. WHQ/W-4/Track/Works matter/167 dated 10.03.15 & 08.04.15.
(ii) CTE/ER's letter No. W(7)/632/11/XA/USFD/Outsourcing dated 25.03.15 & 06.04.15.
(iii) Rly Board's letter no. Track/21/2004/0902/7 dated 08.02.2012 and 29.09.2014.
(iv) RDSO's letter No. CT/USFD/Outsourcing dated 08.04.2015.

1. Vide above referred letters, CTE/WCR and CTE/ER had raised issues of delay in approval of USFD testing machines, operators & QAP by RDSO for want of which tenders of outsourcing of USFD testing are being affected. Matter was referred to RDSO for comment.

2. In compliance, ED/Track-1/RDSO has informed vide his letter dated 08.04.2015 that:

(i) Detailed procedure order for certification of USFD Machines, USFD operators & quality Control Supervisors and verification of Quality Assurance Plan was issued vide RDSO's letter dated 17.10.2014. The firms, who have QAP approved earlier for USFD testing of Rails/Welds as per procedure in-vogue, were also specifically advised regarding issue of above mentioned procedure order with a request to take necessary action as per this procedure order.

(ii) From the current status of QAP's received in this office, it is seen that the response of firms in submission of QAP has not been satisfactory. Even though the procedure order contained the details to be furnished by firms in QAP, the same have been found deficient in requisite information during scrutiny at RDSO, resulting in frequent advice to the agencies regarding discrepancies. As such, no QAP could be approved till date.

(iii) From letters of Railways, it is gathered that due to non-finalization of agency for outsourcing, the USFD testing is going in arrears. As the response of firms in submission of QAP has not been found satisfactory, a serious concern is felt whether outsourcing can be considered a reliable way for safety critical USFD work. The problem may arise in future also at the time of re-validation of QAP, when adequate firms with re-validated QAP may not be available. Thus, it will not be prudent on the part of Zonal Railways to consider the outsourcing of USFD as regular measure. The outsourcing shall be resorted to only as an interim measure to clear the increased workload due to increase in frequency on account of increased traffic density etc. The Railway must have adequate USFD testing infrastructure commensurate with Annual assessed workload so that large scale arrears in USFD testing does not occur.

(iv) In view of progress being made it is envisaged that approval of QAP for two firms shall be possible by May, 2015, if proper interest is shown by firms.

3. In view of above and representations from zonal railways for delay in finalization of USFD tenders, it is instructed that till 31.08.2015, all tenders for outsourcing of USFD testing should be called by Zonal Railways without keeping Para (v)-(vii) & (ix)-(x) of Board's letter dated 26.03.14 as part of tender conditions and instead earlier instructions of Railway Board that 'After award of the contract, the machine and operator are to be certified by RDSO initially before the actual start of the work' may be followed.

4. It is further to emphasize that clear instructions were issued in Board's letter dated 08.02.12 that "For USFD testing of rails, emphasis of Railway should be, to first fill up the vacancies in USFD cadre and procure digital machines, keeping in view next three years requirement so that maximum quantity of USFD testing is done departmentally and quantity of outsourcing can be minimized." Hence these instructions should be strictly followed. Thus, the outsourcing of USFD testing should not be considered as regular measure. The outsourcing shall be resorted to only as an interim measure to clear the increased workload due to increase in frequency on account of increased traffic density etc. The Railway must have adequate USFD testing infrastructure commensurate with Annual assessed workload so that large scale arrears in USFD testing does not occur.

22.4.15

(Manoj Garg)
Director/Track(P)
Railway Board.

Copy to: ED/Track-1/RDSO for information and necessary action.

(4)

143

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. Track/21/2009/0110/7 New Delhi, dated 05.05.15

Principal Chief Engineers,
Chief Administrative Officers (Con),
All Indian Railways.

Sub: AT Welding of rails in construction projects.
Ref: 1. This office letters of even no. dated 04.08.2011 & 03.12.2014.
2. CTE/ER's letter no. W(7)633/)/Pt.VIII dated 26.02.15.
3. CAO(C)II/ER's letter no.CAO/Con/W/156 Pt.XX/192 dated 05.02.15

CAO(Con)II/ER had requested vide his above referred letter to permit AT Welding for welding of 10 rail panels/20 rail panels in construction projects. Matter has been considered in Board's office and in continuation of Board's above referred letter dated 03.12.2014, AT Welding has also been permitted for welding of 10 rail panels/20 rail panels in construction projects with the approval of CAO(Con).

For other locations, approval of PCEs to be taken even for a single AT Welding in construction projects as instructed in this office earlier letter dated 04.08.11.

05.05.15

(Manoj Garg)
Director/Track(P)
Railway Board
O/C

Copy to: ED/Track-I/RDSO- for information.

2. Konkan Railway
3. IRICEN, Pune
4. All PSUs.

Issue (A3)
Xerox 6/5/15

06/05/15

(144)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. Track/21/2002/0905/7/Vol.II

New Delhi, dated 18.05.15.

Principal Chief Engineers,
All Indian Railways.

Sub: Committee to study provisions of defective welds.
Ref: This office letter of even no. dated 18.03.2015.

Vide above referred letter, instructions as recommended by committee of ED/Track(P)/Railway Board(Convener), ED/Track-I/RDSO, CTE/SR and CTE/WCR nominated by Board (ME) to review the provisions of defective welds, were issued for compliance by 15.04.2015. Item no. 6 and 7 of above instructions are reproduced below:

Item no. 6: For sensitization of field officers and staff, **one weld in every division will be got executed by CTEs in their presence** as per guidelines of Manual for Fusion Welding of Rails by the Alumino-Thermic Process- Revised 2012 and observing all instructions of checklist of AT Welding. Its report including suggestions, constraints if any and deficiency noted may be sent to Board.

Item no. 7:Similarly **initial testing of one new weld per division will be got executed by CTEs in their presence** as per guidelines of Manual for Ultrasonic Testing of Rails and Welds-Revised 2012 observing all instructions of checklist of USFD testing. Its report including suggestions, constraints if any and deficiency noted may be sent to Board.

In this reference, it is desired that compliance of above two instructions specifically and other instructions of above mentioned letter may be sent to Board immediately for perusal please along with report including suggestions, constraints if any and deficiency noted.

(Manoj Garg)
Director/Track(P)
Railway Board

142

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. Track/21/2007/0903/7 New Delhi, Dated 30th Apr, 2015

Principal Chief Engineers,
All Indian Railways.

Sub: USFD testing of rails by Sr.DENs.

Please recall the discussion held during the PCEs' Conference held at Railway Board on 22.04.2015, wherein, ME had directed that all Sr.DENs/DENs/ADENs should be got trained in testing of rails by USFD machines by themselves. It was also suggested that workshops should be organized to train the Sr.DENs and other Officers down the line in using USFD machines independently.

As directed by ME, kindly ensure that such workshops are held in all the Divisions and all Sr.DENs/DENs/ADENs are trained to handle USFD machines independently. A certificate to this effect should be submitted to Board under the signature of PCE by 22.05.2015.

Narayanan 30/4/15

(S.S.Narayanan)
Additional Member (Civil Engg.)
Railway Board

(145)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. Track/21/2002/0905/7/Vol.II

New Delhi, dated 22.05.2015.

Principal Chief Engineers,
All Indian Railways.

Sub: Phasing out of Analogue SRT/DRT Machines.
Ref: This office letter of even no. dated 06.07.09, 07.07.09, 27.02.12, 09.05.13 & 17.03.15.

1. Vide above referred letters, Zonal Railways were advised that "as per Hon'ble MR's budget speech 2009-10 (Item No. 27), digital ultrasonic flaw detecting machines are to be used for ultrasonic testing of rails/welds." In the XIIth five year plan also it was committed that all analogue machines will be phased out by 2013-14. Accordingly, it was instructed that henceforth all procurement of USFD testing machines either on replacement account or on new account will be with digital machines only. It was also instructed that "during the next five years existing analogue SRT/DRT machines are planned to be phased out by digital ultrasonic testing machines; SRT/DRT/Weld Tester.

2. It is to emphasize that item of replacement of analogue type of USFD Testing machines with Digital type machines has been included in the pronouncements made in MR's Budget Speech 2015-16 vide Para no. 70 and now the progress of this item is being monitored by Hon'ble MR regularly.

3. Hence, it is advised that no analogue type of USFD testing machine should be used for testing of rails and welds after 30.09.2015. USFD testing of rails and welds should be done with digital type of USFD testing machines only after 30.09.15.

(S.S.Gupta)
Executive Director/Track(P)
Railway Board

(146)

GOVERNMENT OF INDIA\
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2014/Track-1/5/22 New Delhi, dated 30.06.15.

Principal Chief Engineers,
All Indian Railways.

Sub: 'Joint Procedure Order' for operations of EUR rakes.
Ref: This office letter of even no. dated 15.06.2015.

Vide this office letter referred above, it was advised that in connection with accident of end-unloading rake loaded with 48 Nos. of 60kg, 20 rail panels (260m long loaded in four layers) on 03.07.2013 between Khuri and Sumeri Stations on Down line in Bina-Katni double line BG electrified section of Jabalpur, CRS/ Central Circle/Mumbai had instructed that "Instructions for loading of 10/20 rail panels in EUR, movement of EUR from loading point to destination station, movement of EUR to unloading work site & back, unloading of 10/20 rail panels at work site, minimum traffic & power block requirement for working of EUR unloading of 10/20 rail panels during night block and special precautions to be taken while working and unloading 10/20 rail panels in electrified sections should be framed."

In this reference, recommendations of CRS/Central Circle/ Mumbai and remarks of RDSO on the same are attached for incorporating these recommendations in the JPO to be issued by zonal railways. If JPO in some zonal railways are already there, than it can be ensured that all the recommendations of CRS/ Central Circle/Mumbai are covered in that and if not covered than JPO may be revised accordingly by zonal railways by 31.07.15 positively and a copy may be sent to Board's office.

It may be treated as URGENT.

DA/ As above.

30.06.15

(Manoj Garg)
Director, Track(P)
Railway Board

Comments on the recommendations of CRS/ Central Circle:

S. No.	Recommendation No.	Recommendations contained in Final Report of CRS	Comments
1.	9.1.1	Instructions for loading of 10/20 rail panels in to the EUR, movement of EUR from loading point to destination station, movement of EUR to unloading work site & back, unloading of 10/20 rail panels at work site, minimum traffic & power block requirement for working of EUR, unloading of 10/20 rail panels during night block and special precautions to be taken while working and unloading 10/20 rail panels in electrified sections should be included in Indian Railway Permanent Way Manual & General Rule. (Refer Para 7.11.1).	The guidelines for Handling and Stacking of Rails bearing no. CT-35 of October, 2014 has been issued after approval of Railway Board to all zonal railways vide RDSO letter no. CT/Rail/Handling dated 05.11.2014. The Para 2.3 of these guidelines deal with the handling of Long welded rail Panels, (including loading and unloading) while Para 2.5 deals with the Precautions for handling of rails in electrified territory. Regarding other issues related to operations of EUR, zonal Railways have been advised vide Railway Board's letter No.2014/Track-I/5/22 dated 15/06/2015 to issue the JPO in zonal railways in consultation with Operating Department. The draft Addendum & Corrigendum Slip (ACS) to relevant Paras of IRPWM has been issued by Board vide Correction slip no.137. Relevant ACS to General Rules, shall have to be done by Safety Directorate.
2	9.1.2	Bulk head flap door and rail stopper behind bulk head flap door should be opened/ removed at unloading site just before starting unloading of 10/20 rail panels. Bulk head flap door and rail stopper of layer from which 10/20 rail panels are to be unloaded should only be opened/removed, all other bulk head flap doors and rail stoppers should remain intact. (Refer Para 7.4.3 & 7.9.2)	The Para 2.3.2 (ii) of the guidelines issued vide RDSO letter no. CT/Rail/Handling dated 05.11.2014 stipulates as under: "The unloading shall be started from top layer panels. The protective rail and flap door of bulk head shall be opened during block only for the layer to be tackled. Once all the rails of that layer are unloaded, next layer door shall be opened for unloading." Speed certificate of 5 tier EUR rakes on BRN/BRNA/BRNAHS wagon issued vide

S. No.	Recommendation No.	Recommendations contained in Final Report of CRS	Comments
			letter no. CT/RL dated 03.12.2014 has also similar provision. Thus, recommendation of CRS/ Central Circle has been complied.
3	9.1.3	8 wheeler staff coach/ 8 wheeler covered wagon should be attached to EUR formation (at other end where ramper and threader are not attached) for staff. During movement of EUR, staff should travel only in 8 wheeler staff coach/ 8 wheeler covered wagon, staff should not be allowed to travel on ramper/ threader or any other BRN/BFR/BRH of EUR. (Refer Para 7.4.6 & 7.9.3)	The speed certificate for 5 tier EUR rakes on BRN/BRNA/BRNAHS wagon has been issued vide letter No.CT/RL dated 03.12.2014, which includes the provision of one covered wagon (BCN variant) for travelling of staff during transportation and unloading of rails. Para 4.0 (i) of the Guidelines issued vide RDSO letter no. CT/Rail/Handling dated 05.11.2014 provides as under: "The staff deputed for unloading of EUR rakes must never travel on BFRs. They shall travel only in tool van/separate wagon provided in rake composition. No staff shall be allowed on ramper/threader during movement of rake from one station to another station where rake is moving for non- block activity." Thus, the recommendation of CRS/ Central Circle is complied.
4	9.1.4	In case of partial unloading of 10/20 rail panels from a layer, if rake has to move with bulk head flap door in open condition without rail stopper, maximum permissible speed of EUR should be restricted to 15 kmph. (Refer Para 7.11.2)	Para 2.3.2 (vi), (x) & (xi) of Guidelines issued vide RDSO letter no.CT/Rail/Handling dated 05.11.2014 reads as under: Para (vi) "Other end of manila rope should be tied to any fixed structure capable of pulling rail load and allow the rake to move forward at very cautious speed not exceeding 15kmph so that in the event of any

S. No.	Recommendation No.	Recommendations contained in Final Report of CRS	Comments
			unusual/unsafe situation the rake can be stopped immediately". Para (x) "The EUR rake shall not run either backward or forward with open door of bulk head in any circumstance except in block during unloading" Para (xi) "In case, traffic block is to be cleared before complete unloading of rake, the clamps for layers, where rail panels are left shall be re-fixed properly before movement of rake to avoid any chance of movement of panel during run". The issue of speed shall be included in the JPO related to operation of EUR rakes by zonal railways.
5	9.1.5	Staff working on EUR should be equipped with safety equipments like helmet, industrial safety shoes, industrial safety hand gloves and industrial safety jackets. (Refer Para 7.9.4)	Para 4.0 (iii), (v) and (vi) of the Guidelines issued vide RDSO letter no. CT/Rail/Handling dated 05.11.2014 provides for use of protective gloves and clothings, helmet and protective footwear for safety of personnel working on EUR.
6	9.1.6	Whenever unloading of 10/20 rail panels is to be done on graded section having gradient steeper than 1 in 100, unloading should be done by moving the train towards down gradient. (Refer Para 7.11.3)	The practice in this regard needs to be reviewed by zonal railways and suitable provisions shall be made in guidelines related to JPO of EUR rakes by zonal railways.
7	9.1.7	In sections where gradient is steeper than 1 in 80, during normal movement of EUR speed restriction of 30 kmph should be followed (Refer Para 7.11.4).	The para 2.7.7 of speed certificate for 5 tier EUR rake on BRN/BRNA/BRNAHS wagons issued vide letter no.CT/RL dated 03.12.2014 reads as under "In sections where gradient is steeper than 1

S. No.	Recommendation No.	Recommendations contained in Final Report of CRS	Comments
			in 80, speed restriction of 30kmph shall be followed."
8	9.1.8	During process of unloading 10/20 rail panels in double/multiple line sections, speed restrictions of '30 kmph and whistle freely' should be imposed on adjoining lines. (Refer Para 7.1.6)	i) The following provision is already existing in the speed certificate of 4 tier EUR rake on BRN wagons issued vide letter no. CT/RL dated 28.07.2008 and 24.07.2013:- "There shall not be any safety implications on moving of train on adjoining line during the operation of unloading of rails. The distance between the extreme edges of two rails during operation of unloading shall not be more than 3500mm in any case. A lookout caution should be enforced on adjoining line for ensuring the safety of the workmen carrying out unloading of rails." ii) The similar provision has been included in final speed certificate of 5 tier EUR rakes on BRN/BRNA/BRNAHS wagon issued vide letter no. CT/RL dated 03.12.2014 vide Para 2.7.6 which reads as under: "There shall not be any safety implications on moving of trains on double/multiple lines during the operation of unloading of rails. The distance between the extreme edges of two rails during operation of unloading shall not be more than 3500mm in any case. A lookout caution with advice to whistle freely shall be imposed on adjoining lines for ensuring the safety of the workmen carrying out unloading of rails." iii) The practice in this regard needs to be reviewed by zonal railways and suitable provisions shall be made in JPO related to operation of EUR rakes by zonal railways.

S. No.	Recommendation No.	Recommendations contained in Final Report of CRS	Comments
9	9.1.9	While passing through platform lines and negotiating turnouts, maximum permissible speed of EUR should be restricted to 15 kmph (Refer Para 7.11.5).	i) The provision that while negotiating the turnout, maximum permissible speed of EUR shall be restricted to 15 kmph has been incorporated in final speed certificate of 5 tier EUR rakes on BRN/BRNA/BRNAHS wagon issued vide letter no. CT/RL dated 03.12.2014 vide Para 2.7.8 of speed certificate which reads as under: "While negotiating turnouts, maximum permissible speed of EUR during normal movement shall be restricted to 15 kmph". ii) The practice of speed restriction while passing through platform line needs to be reviewed by zonal railways and suitable provisions shall be made in JPO related to operation of EUR rakes by zonal railways.
10	9.1.10	To follow safe practice of opening bulk head flap doors and removing rail stoppers behind bulk head at work site just before starting unloading of 10/20 rail panels adequacy of traffic blocks should be ensured. (Refer Para 7.9.2)	This being operational issue, practice shall be reviewed by Zonal Railways and suitable provisions shall be included in JPO related to operation of EUR rakes by Zonal Railways.

152

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. Track/21/2002/0905/7/Vol.II

New Delhi, dated 14.07.2015.

Principal Chief Engineers,
All Indian Railways.

Sub: Phasing out of Analogue SRT/DRT Machines.
Ref: This office letter of even no. dated 06.07.09, 07.07.09, 27.02.12, 09.05.13 17.03.15, 22.05.15 & 02.07.2015.

1. Vide above referred letters, Zonal Railways were advised that item of replacement of analogue type of USFD Testing machines with Digital type machines has been included in the pronouncements made in MR's Budget Speech 2015-16 vide Para no. 70 and now the progress of this item is being monitored by Hon'ble MR regularly. It was further advised that no analogue type of USFD testing machine should be used for testing of rails and welds after 30.09.2015. It was also requested that planning of replacement of analogue type of USFD testing machines with digital type of machines by 30.09.2015 may be sent to Board.

2. It is mentioned that by now only ECoR, NCR, NER, NFR, NWR, SR and SER have confirmed that they are using only digital type of USFD testing machines and in SECR there is only one analogue DRT in use which will also be replaced by 30.09.15 and in rest of the Railways, procurement of digital testing machines to replace analogue type of testing machines are in different stages of procurement.

3. Hence, as the progress of this item is being monitored by Hon'ble MR regularly, it is once again emphasized that planning of replacement of analogue type of USFD testing machines with digital testing machines may be monitored at your level and board may be apprised accordingly and it may be ensured that USFD testing of rails and welds is done with digital type of USFD testing machines only after 30.09.15.

This may be treated as URGENT.

(S.S.Gupta)
Executive Director/Track(P)
Railway Board

153

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. Track/21/08/014/7/1/Specifications New Delhi, dated 2 .07.2015.

Principal Chief Engineers,
All Indian Railways.

Sub : Manufacturing of short length(10-12 m) end forged thick web asymmetric (Zu-1-60) rail by Bhilai Steel Plant.
Ref : ED/Track-II/RDSO's letter no. CT/TWS/Forging dated 16.07.15.

1. Bhilai Steel Plant is manufacturing end forged thick web asymmetric (Zu-1-60) rails primarily in 13 m length but in this process shorter lengths of 10m to 12m asymmetric rails are being generated. In this connection, ED/Track-II/RDSO has intimated that Thick Web Switches of three designs have been developed by RDSO, the details are given below :

S.N.	Description	Drawing No.	Switch Length	Tongue Rail Length
1.	10125mm curved switch with Zu-1-60 thick-web tongue rails for 1 in 12 turnout BG for 60Kg (UIC) on PSC sleepers	RDSO/T-6155	10125mm	12480mm
2.	6400mm curved switch with Zu-1-60 thick-web tongue rails for 1 in 8.5 Turnout BG for 60Kg (UIC) on PSC sleepers	RDSO/T-6280	6400mm	7620mm
3.	11200mm curved switch with Zu-1-60 thick-web tongue rails for 1 in 16 turnout BG for 60Kg (UIC) on PSC sleepers	RDSO/T-7076	11200mm	12935mm

2. ED/Track-II/RDSO has further informed to Board that the major requirement in Indian Railways is of 1 in 12 of thick web switches to drawing no RDSO/T-6155 with the tongue rail length of 12480mm for which 13 m end forged asymmetric rails are needed. However, tongue rail of 7620mm length is used for in 8.5 thick web switch to drawing no RDSO/T-6280 for which end forged asymmetric rail of shorter lengths (10 m to 12 m) may be used.

3. In view of above, it is requested that zonal railways may issue orders for end forged asymmetric rail of shorter lengths (10 m to 12 m) for 1 in 8.5 thick web switches to drawing no. RDSO/T-6280 on Bhilai Steel Plant as per their requirement.

(Manoj Garg)
Director/Track(P)
Railway Board.

Copy to : 1. ED/Track-II/RDSO:- For information and necessary action please.
2. CEO/Bhilai Steel Plant: For information and necessary action please.

(154)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. Track/21/95/0514/7 ND-II

New Delhi, dated 13.08.15.

Principal Chief Engineers,
All Indian Railways.

Sub: Field Trials of new type of Rails.

Board has desired that all PCEs should diligently follow the directives issued by RDSO/Board while laying new types of rails for trials e.g NCC rails, Cu-Mo rails, 110 UTS rails, Niobium and Vanadium Micro Alloyed Rails etc. Railway will not make changes to the scheme without the consent of RDSO and Railway Board.

Regular feedback of performance of these rails may be sent to RDSO and Railway Board at regular intervals as per instructions of RDSO.

13.08.15

(Manoj Garg)
Director/Track(P)
Railway Board.

155

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

No.2015/Track-I/5/12 New Delhi, dated.12.10.2015

Principal Chief Engineers,
All Indian Railways.

Sub:- Levy of departmental charges @ 12.5% through Adjustment Memo for supply of Rails to various firms in favour of NWR (Open Line) by SE Railway Kolkata

It has been brought to the notice of Railway Board by North Western Railway that South Eastern Railway is invariably levying departmental charges @12.50% on the gross cost of rails issued for fabrication of switches etc. to other Zonal Railways. After considering the matter, it has been decided by the Competent Authority that Fabrication of SEJs is for Railway's internal use. No Departmental charge is leviable.

Accordingly, all Zonal Railways are advised to note the instructions for compliance and not to levy any departmental charges on inter-railway transfer of rails.

12.10.15

(Manoj Garg)
Director Track(P)
Railway Board

(3)
(156)

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

No. Track/21/2006/0500/7

New Delhi dated.13.10.2015

The Principal Chief Engineers,
All Indian Railways.

Sub:- Points noted during ME's visit on DFCCIL's site on 24.9.2015

Following points noted during ME's visit on DFCCIL's site on 24.9.2015, are forwarded to all Zonal Railways for necessary action at their end:-

Point no.7:-PVC sheets of suitable size should be provided on bulk heads in 10/20 RP Rakes to avoid damage to rail ends. All PCEs to confirm the same.

Point No.8:-The routes for movement of 20RP rakes should be defined at starting points itself to avoid chance of derailment of such rakes.

Accordingly, all Zonal Railways are advised to take note of the same and send their compliance report in the matter.

13.10.15

(Manoj Garg)
Director Track(P)
Railway Board

(141)
157

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

No. Track/21/2004/0110/7/51154 New Delhi 20.10.2015.

Principal Chief Engineers,
All Indian Railways.

Sub: Independent Audit of Flash Butt Welding sites.

Independent Audit of various Mobile Flash Butt Welding sites have been got done by Board for improving the quality of works at sites and various shortcomings, their effect and action taken for those shortcomings have been listed in the enclosed annexure. It is desired that atleast one stationary/Mobile Flash Butt welding plant site should be thoroughly inspected by CTE of all zonal railways and rest of the sites in zonal railways may be inspected by concerned Sr.DEN/C or Sectional Sr.DEN and all items of enclosed annexure may be checked and deficiencies found at site and action taken by zonal railways may be advised to Board for each site.

It may be treated as URGENT.

20/10/15

(B.P.Awasthi)
Executive Director/Track (P)
Railway Board

DA: As above.

Copy to: Executive Director/Track-1/RDSO:- For giving his remarks on item no. 13 and 14.

Annexure

Shortcomings, their effects and Action to be taken in Mobile Flash Butt Welding works at site.

S.No.	Shortcomings	Effects	Action to be taken
	A. For Zonal Railways		
1	Contractors not grinding the rail correctly.	This causes a large heat effected zone.	Grinding of rail ends should be done correctly.
2	Bad or incomplete cuts of the rail.	Cuts that are not straight causes the same as above	Rail ends should be perfectly vertical
3	Worn/ Shear Dies/Electrodes	This can affect the alignment and weld finish.	Dies/ Electrodes should be in good condition.
4	Welding too close to bolt holes.	Causes a weak spot in the rail	Preferably,rails to be welded should not have bolt holes. If unavoidable, bolt hole should be at minimum specified distance from the rail ends as mentioned in para 2.3 of FBW Manual-Revised 2012.
5	Improper transportation of the rail	Crooked rail ends causing alignment issues.	Transportation, loading and unloading of rails should be done with proper care complying "guidelines for handling and stacking of rails- issued October 2014".
6	Finish grinding of the rails before the rail is tamped (new construction)	Dipped weld.	Grinding of rails should be done before tamping of track.
7	Contractors using MFBW Machines without required butting force of Machines.	Not enough weld fusion.	MFBW Machines having required butting force to be used to comply provisions of para 5.3.4 of FBW Manual-Revised 2012.
8	Frequent breakdown of machines due to poor machine maintenance and use of local spare parts of machines of poor quality.	Machine uptime is affected and this can also affect the quality of weld.	Proper and timely maintenance of machines with use of good quality of spare parts should be ensured.
9	Quality of operators.	Untrained operators.	Properly trained and RDSO qualified operators should be allowed to do the welding.
10	Lack of in-country experience to operators and supervisors.	Training (Theoretical and practical) can be provided by OEMs.	Proper training (Theoretical and practical) should be provided preferably by OEMs.
11	Split contracts for various activities of MFB Welding and ancillary activitites.	Mismanagement and poor coordination of work between various agencies which result into poor quality and progress of work	Contracts specifications should be properly designed to ensure good progress.
12	Poor quality works.	Poor quality welding.	Penalties for poor quality work
	B. For ED/Track-1/RDSO		
13	RDSO dictating weld parameters on the FBW Machines	Every FBW Machine's welds are different and should be left to weld test results only.	Comments to be given by RDSO.
14	Tolerance allowed for welds are strictrer than tolerance allowed to new rails	Joint approval issues associated with alignment.	Comments to be given by RDSO

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

No. 2011/Track-I/12/1 New Delhi, 16.12.2015

Principal Chief Engineers,
All Indian Railways.

Sub: Tender for Mobile Flash Butt.Welding Plant.
Ref: Board's letter of even No. dated 16/17.04.2014.

Railways are advised that Tenders for Mobile Flash Butt Welding should be called at Zonal Railways level instead of Divisional level to ensure adequate number of joints and for better contract management, as per instructions approved by Board (ME) circulated vide Board's letter dated 16/17.04.2014 (copy enclosed for ready reference).

16.12.15

(Manoj Garg)
Director Track (P)
Railway Board

Copy to : ED/Track-I/RDSO for necessary action.

Please send
16/12/15

16/12/15

(160)

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

No. 2011/Track-1/5(1)/8

New Delhi 22.12.2015.

Chief Track Engineer,
Northern Railway, New Delhi.
North Eastern Railway, Gorakhpur.
East Central Railway, Hajipur.
South Eastern Railway, Kolkata.
Western Railway, Mumbai.
South Central Railway, Secunderabad.
Southern Railway, Chennai.

Sub: Planning of welding of rails in Stationary Flash Butt welding Plants and movement of long rails from BSP after commissioning of new rail rolling mill.

A meeting was held in this office for welding of rails in Stationary Flash Butt Welding plants of zonal railways and planning of supply of rails from Bhilai Steel Plant after commissioning of new rail rolling mill at Bhilai was also discussed during the meeting. Minutes of the meeting and planning of movement of long rails from Bhilai Steel Plant after commissioning of new rail rolling mill at Bhilai duly approved by Board is being sent for information and taking necessary action please.

22.12.15

(Manoj Garg)
Director/Track(P)
Railway Board.

Copy to : PCEs and CAOs of all zonal railways-for information and necessary action please.

Minutes of the meeting held in the chamber of Executive Director/Track(P), on 14.12.2015 regarding planning of welding of rails in Stationary Flash Butt welding Plants.

The following were present:
Shri B.P.Awasthi, Executive Director/Track(P)/Railway Board.
Shri S.K. Pandey, Executive Director, Civil ENgg (P)/Railway Board.
Shri Rakesh Goyal, CTE, Northern Railway, New Delhi.
Shri Sonvir Singh, CTE, North Eastern Railway, Gorakhpur.
Shri Virender Kumar, CTE, East Central Railway, Hajipur.
Shri L.K.Sachan, CTE, South Eastern Railway, Kolkata.
Shri Sharad Mehta, CTE, Western Railway, Mumbai.
Shri K.K.Sharma, CTE, Southern Railway, Chennai.
Shri Manoj Garg, Director/Track(P)/Railway Board.

Sr. No.	Item	Compliance by
1.	**Planning of Flash Butt Welding Plant, Gonda, NER.**	
	(i) CTE/NER advised that condition of stationary flash butt welding plant at Gonda is satisfactory. Regular maintenance of this plant is being done through OEM. Rail handling facilities i.e. unloading of rails, handling of rails during welding and loading of rails are in good condition. Operation of this Flash Butt Welding plant is being done through outsourcing.	CTE/NER CTE/NR CTE/NCR
	(ii) By now flash butt welding of 13000 joints have been done during the year 2015-2016 and in the balance period welding of another 7000 joints will be done.	
	(iii) Next year in 2016-2017, NER has planned to weld 24000 joints in flash butt welding plant, Gonda.	
	(iv) This plant is welding rails for NER/OL, NER/Con. & NR/OL.	
	(v) NER is having one EUR rake at present. One new EUR rake is being fabricated for NER in mechanical workshop, Jhansi which will be ready by next month. Both these EUR Rakes will be used by NER for transportation of long rail panels.	
	(vi) It has been planned to continue this plant and after commissioning of new rail rolling mill at Bhilai, it will be used primarily for welding of Second Hand Rails for secondary renewals and welding of new rails as per need.	

2.	**Planning of Flash Butt Welding Plant, MGS, ECR.** (i) CTE/ECR advised that stationary flash butt welding plant at MGS is working but this plant is old and has outlived its life. Major repair/replacement of this plant is required. Rail handling facilities i.e. unloading of rails, handling of rails during welding and loading of rails are in good condition. Operation of this Flash Butt Welding plant is being done through departmental labour. (ii) By now flash butt welding of 6000 joints have been done during the year 2015-2016 and in the balance period welding of another 7200 joints will be done. (iii) Next year in 2016-2017, ECR has planned to weld 21600 joints in flash butt welding plant, MGS. (iv) This plant is welding rails for ECR/OL, ECR/Con, NCR/OL & NR/OL. Welding of rails for ECR/OL has been completed for this financial year and for meeting the welding target of 2015-2016, rails of NR/OL and NCR/OL will be sent for welding at MGS Plant. (v) ECR is having three EUR rakes at present which are being used by ECR for transportation of long rail panels from MGS Plant to ECR. Condition of these rakes is satisfactory and these can be used for transportation of long rails from Bhilai Steel Plant after commissioning of new rail rolling mill. (vi) It has been planned to continue this plant with necessary repair/replacement. After commissioning of new rail rolling mill at Bhilai, it will be used primarily for welding of Second Hand Rails for secondary renewals and welding of new rails as per need.	CTE/ECR, CTE/NR CTE/NCR
3.	**Planning of Flash Butt Welding Plant, Jharsuguda, SER.** (i) CTE/SER advised that stationary flash butt welding plant at Jharsuguda is out of order since last 2-3 years and they have processed for its condemnation and a new stationary flash butt welding plant is required for replacement of the old plant. By that time flash butt welding in this plant is being done through outsourcing by installing mobile flash butt welding plant in stationary mode. There is provision of only 2000 joints in the existing contract and 40% variation has already been done. New tender has been invited and is under finalization. Rail handling facilities i.e. unloading	CTE/SER CTE/ECoR CTE/SECR

	of rails, handling of rails during welding and loading of rails are in good condition. Operation of this Mobile Flash Butt Welding plant is being done through outsourcing. (ii) By now flash butt welding of 16500 joints have been done during the year 2015-2016 and in the balance period welding of another 7000 joints will be done. (iii) Next year in 2016-2017, SER has planned to weld 24000 joints in flash butt welding plant, Jharsuguda. (iv) This plant is welding rails for SER/OL, SER/Con., ECoR/OL & SECR/OL. In the balance period of the year 2015-2016, four rakes of long rails to ECoR/OL and four rakes of long rails to SECR/OL will be sent. (v) SER is having three EUR rakes at present which are being used by SER for transportation of long rail panels from Jharsuguda Plant to SER. Condition of these rakes is not good as these are old rakes and are fit for local movement within the zonal railway. (vi) It has been planned to continue this plant with necessary major repair/replacement. After commissioning of new rail rolling mill at Bhilai, it will be used primarily for welding of Second Hand Rails for secondary renewals and welding of new rails as per need.	
4.	**Planning of Flash Butt Welding Plant, Sabarmati, WR.** (i) CTE/WR advised that stationary flash butt welding plant at Sabarmati is working but this plant is old and has outlived its life. Hence, major repair/replacement of this plant is required. Rail handling facilities i.e. unloading of rails, handling of rails during welding and loading of rails are in good condition. Operation of this Flash Butt Welding plant is being done through departmental labour. (ii) One more mobile flash butt welding plant through outsourcing has been installed and used for making long rail panels in stationary mode. (iii) By now flash butt welding of 20000 joints have been done during the year 2015-2016 and in the balance period welding of another 14000 joints will be done. (iv) Next year in 2016-2017, WR has planned to weld 42000 joints in flash butt welding plant, Sabarmati.	CTE/WR CTE/NWR

	(v) This plant is welding rails for WR/OL, WR/Con. & NWR/OL. (vi) WR is having five EUR rakes at present which are being used by WR for transportation of long rail panels from Sabarmati Plant to WR. Besides this, two EUR rakes of NWR/OL are also being used for movement of long rails. Condition of all these rakes is satisfactory and these can be used for transportation of long rails from Bhilai Steel Plant after commissioning of new rail rolling mill. (vii) It has been planned to continue this plant with necessary repair/replacement of the plant. After commissioning of new rail rolling mill at Bhilai, it will be used primarily for welding of Second Hand Rails for secondary renewals and welding of new rails as per need.	
5.	**Planning of Flash Butt Welding Plant, Arrakonam, SR.** (i) CTE/SR informed that stationary flash butt welding plant at Arrakonam is out of order for last 2-3 years. At present, flash butt welding in this plant is being done through outsourcing by installing mobile flash butt welding plant in stationary mode. Rail handling facilities i.e. unloading of rails, handling of rails during welding and loading of rails are in good condition. Operation of this Mobile Flash Butt Welding plant is being done through outsourcing. (ii) By now flash butt welding of 9000 joints have been done during the year 2015-2016 and in the balance period welding of another 7000 joints will be done. (iii) Next year in 2016-2017, SR has planned to weld 22000 joints in flash butt welding plant. Arrakonam. (iv) This plant is welding rails for SR/OL & SR/Con. (v) SR is having seven EUR rakes of 10 rail panels at present which are being used by SR for transportation of 10 rail panels from Arrakonam Plant to SR. Condition of these rakes is not good as these are old rakes and fit for local movement within the zonal railway. (vi) It has been planned to continue this plant with necessary repair/replacement. After commissioning of new rail rolling mill at Bhilai and it will be used primarily for welding of Second Hand Rails for secondary renewals and welding of new rails as per need.	CTE/SR

6. **Planning of Flash Butt Welding Plant, Moula Ali, SCR.**

(i) CTE/SCR could not attend the meeting due to some urgent work in the railway. Planning of flash butt welding plant Moula Ali was discussed with him on phone and position is summarized below. CTE/SCR CTE/CR

(ii) Stationary flash butt welding plant at Moula Ali is out of order since last 3 years and a new stationary flash butt welding plant is required. By that time flash butt welding in this plant is being done through outsourcing by installing mobile flash butt welding plant in stationary mode. Rail handling facilities i.e. unloading of rails, handling of rails during welding and loading of rails are in good condition. Operation of this Mobile Flash Butt Welding plant is being done through outsourcing. Periodic Overhauling of this contractor's plant is due and POH of this plant is planned in Jan-Feb 2016.

(iii) By now flash butt welding of 22320 joints have been done during the year 2015-2016 and in the balance period welding of another 9000 joints will be done.

(iv) Next year in 2016-2017, SCR has planned to weld 36000 joints in flash butt welding plant, Moula Ali.

(v) This plant is welding rails for SCR/OL, SCR/Con and one rake has also been assured to CR/OL.

(vi) SCR is having one 20 rail panel EUR rake and two 10 rail panel EUR rakes at present which are being used by SCR for transportation of long rail panels from Moula Ali Plant to SCR. Condition of one 20 rail panel EUR rake is good. Condition of two 10 rail panel EUR rakes is not good and fit for only local movement within the zonal railway.

(vii) It has been planned to continue this plant with necessary repair/replacement. After commissioning of new rail rolling mill at Bhilai and it will be used primarily for welding of Second Hand Rails for secondary renewals and welding of new rails as per need.

7. **Planning of Flash Butt Welding Plant, Meerut, NR.**

(i) CTE/NR advised that stationary flash butt welding plant at Meerut is capable of welding 52kg rails only and not fit for welding 90 kg rails. Their major requirement in NR is CTE/NR CTE/NR CTE/EC

	mainly of 60kg rails. At present, NR is using this plant for welding of Second Hand Rails of 52kg. 60 kg long rails panels are being taken by NR from flash butt welding plant, Gonda and MGS by sending their 13m/26m rails for welding and from Bhilai Steel Plant. One tender is also under finalization for welding of 60kg rails by installing mobile flash butt welding plant in stationary mode in flash butt welding plant, Meerut. Rail handling facilities i.e. unloading of rails, handling of rails during welding and loading of rails are in good condition. (ii) It was advised to CTE/NR that during this financial year maximum one rake of long rails per month can be sent from Bhilai Steel Plant and balance requirement they have to meet taking long rails from flash butt welding plant Gonda and MGS by arranging to send 13m/26m rails from Bhilai Steel Plant to these flash butt welding plants. (iii) NR is having three EUR rakes at present which are being used by NR for transportation of long rail panels from Gonda, MGS & Meerut Plant. Condition of all these rakes is satisfactory and these can be used for transportation of long rails from Bhilai Steel Plant after commissioning of new rail rolling mill.	
8.	**Summary:** I. New Universal rail rolling mill is being commissioned at Bhilai by SAIL which is likely to be commissioned by 31.03.2016. After commissioning of this mill, 130m length rails will be rolled in the new mill and rail panels of 260m will be supplied directly to work sites in open line and construction organizations of zonal railways. Capacity of this new rail rolling mill will be about 12 lakh MT per year and rails will be supplied by new mill mainly in 260m length and some quantity in 13m length for points and crossings. Thus, existing 7 stationary flash butt welding plants will not be used for welding of new rails supplied from Bhilai Steel Plant. II. As discussed during the meeting, after commissioning of new rail rolling mill at Bhilai all existing stationary flash butt welding plants will continue with necessary repair/replacement except Meerut FBWP and will be used for secondary renewal of rails by carting the released rails from site to these stationary flash butt welding plants and making the long panels there after flash butt welding. These plants will also be used for welding of new rails as per need. Meerut Plant will be used by NR for four more	PCEs, CTEs and CAOs All Indian Railways

years for secondary renewal of 52kg rails without any major overhauling.

III. Following existing EUR rakes which are in good condition and can be used for transportation of long rails from Bhilai Steel Plant will be taken in central pool and will be maintained by mechanical department of Raipur division of Bhilai.

a) 5 EUR rakes of Western Railway.
b) 2 EUR rakes of North Western Railway.
c) 3 EUR rakes of Northern Railway.
d) 2 EUR rakes of North Eastern Railway.
e) 3 EUR rakes of East Central Railway.

IV. Following existing EUR rakes which are old and fit for local movement in zonal railways will be left to work with stationary flash butt welding plants.

a) 7 EUR rakes of 10 rail panels of Southern Railway.
b) 2 EUR rakes of 10 rail panels of South Central Railway.
c) 3 EUR rakes of 20 rail panels of South Eastern Railway.
d) 3 EUR rakes of 20 rail panels of North Central Railway.
e) 1 EUR rake of 20 rail panels of South Central Railway.
f) 2 EUR rakes of 10 rail panels of West Central Railway.

(Manoj Garg)
Dir/Track(p)
Railway Board

S.No. 395
168

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

सं/**No. 2009/TMS/3/Rly/Meetings** दिनांक/**Date:21.01.2016**

Principal Chief Engineering (s)

1. Central Railway, CST, Mumbai-400001
2. East Central Railway, Hajipur Bihar- 844101.
3. East Coast Railway, Bhubaneswar -364001
4. Eastern Railway, Fairly place, Kolkata 700 001
5. North Central Railway, Allahabad- 211001
6. North East Frontier Railway, Maligaon, Guwahati 78101
7. North Eastern Railway, Gorakhpur- 273012
8. North Western Railway, Jaipur- 302017
9. Northern Railway, Baroda House, New Delhi.
10. South Central Railway, Rail Nilayam, Secunderabad-503721.
11. South East Central Railway, Bilaspur-495004
12. South Eastern Railway, Garden Reach, Kolkota
13. South Western Railway, Hubli-580027
14. Southern Railway, Park Town, Chhenai-600003
15. West Central Railway, Jabalpur-482001
16. Western Railway, Church Gate, Mumbai- 400020

विषय/Sub: Railway Affecting Works (RAW) Module in Track Management System (TMS) Application.

"Railway Affecting Works (RAW)" module has been uploaded and made available on Track Management System (TMS) Application. Railways to start using the same and complete all initial data entry by 15.02.2016. Thereafter, it should be used for regular inspection, work and monitoring. Details/Steps to use RAW Module are as under-

A) RAW Manual

1. Divisional Administrator [admin<divcode>] to enter States/UTs connected with that Railway division.
2. Railway wise and state wise RAW Manual to be prepared, signed and uploaded at Zonal Head Quarter level.
3. Security Administrator of Zonal Railways [sa<zonal-railway>] to upload RAW manuals for each connected States/UTs

Ministry of Railways Railway Board

B) Master Data Entry

1. ADEN to enter the master details of Railway Affecting Works (RAW). He can modify/delete previously entered RAW details.
2. Once master entries are confirmed by ADEN, RAW becomes available for inspection of ADEN.

C) Inspection Data Entry

1. RAW manuals uploaded by Security Administrator of Zonal Railway are available for reference on inspection page also.
2. ADEN to provide details of contact person of organization (Irrigation, PWD, etc.) connected to RAW along with other inspection details.
3. Once inspection is complete and all the details are entered in system, ADEN to confirm the inspection.

D) Compliance Data Entry

1. Once inspection is confirmed, defects which are entered are available for compliance to ADEN.
2. On compliance of each defect, compliance date will be saved against each complied defect.
3. Non complied items are populated in the RAW Compliance list till each and every defect is complied by ADEN.

E) Reports

1. Reports are available for all users.
2. RAW manuals uploaded by Security Administrator of Railway are available for download.
3. Report is available with status of availability of RAW manual for each connected States/UTs to a Zonal Railway.
4. RAW Master analysis report can be generated Authority wise as well as Route/Section wise.
5. Inspection register is available in PDF format.

Railway Board
Signature
Date of issue

Pl. issue 22/11/16

21/1/2016

(B.P. Awasthi)
Executive Director Track (P)
Railway Board

प्रतिलिपि/Copy to:-

1. AM/CE , AM/Works for kind information.
2. Adviser Bridge , Adviser (L&A) for kind information.
3. EDCE(B&S)-I and EDCE(B&S) – II for information and necessary action.
4. EDCE(Plg), EDCE(G), ED(L&A)-I, ED(L&A)-II, EDTK/M, EDTK/MC, ED(Works), ED Proj(Monitoring), ED(W&P) for information

(170)

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

सं/**No. 2009/TMS/3/Rly/Meetings** दिनांक/**Date:02.02.2016**

Principal Chief Engineering (s)

1. Central Railway, CST, Mumbai-400001
2. East Central Railway, Hajipur Bihar- 844101.
3. East Coast Railway, Bhubaneswar -364001
4. Eastern Railway, Fairly place, Kolkata 700 001
5. North Central Railway, Allahabad- 211001
6. North East Frontier Railway, Maligaon, Guwahati 78101
7. North Eastern Railway, Gorakhpur- 273012
8. North Western Railway, Jaipur- 302017
9. Northern Railway, Baroda House, New Delhi.
10. South Central Railway, Rail Nilayam, Secunderabad-503721.
11. South East Central Railway, Bilaspur-495004
12. South Eastern Railway, Garden Reach, Kolkota
13. South Western Railway, Hubli-580027
14. Southern Railway, Park Town, Chhenai-600003
15. West Central Railway, Jabalpur-482001
16. Western Railway, Church Gate, Mumbai- 400020

विषय/**Sub: Landmark Railway Structures – Buildings & Bridges (IR-LS)**

1. New application has been developed for entry of Landmark Railway Structures. It is a web enabled application and is available on Indian Railways Civil Engineering Portal (**www.ircep.gov.in**). On this portal there is a link "**Landmark Railway Structures – Buildings & Bridges**". From this link authorized users can access the application.

a) **Entry of Landmark Railway Structures – Buildings & Bridges**
Entry of Landmark Railway Structures – Buildings & Bridges can be done from the login of Chief Engineer Works only. Login ID's of Chief Engineer Works [CE(W)] of all zonal railways have been created. Details of all such structures along with photographs can be entered/uploaded.

Logins are as: **cew<zonal railway code>** **e.g. cewnr**

CE(W)/CPDE/CGE of Zonal Railways are requested to kindly change/update their profile and password in Track Management System (TMS).

b) **Reports**

At present two reports are available:

a) Landmark Buildings

b) Landmark Bridges

Reports are available for all users. Any user whose login is created in Track Management System (TMS) can access this application.

2. **e-book on Landmark Railway Structures:**

Board intends to prepare an e-book of "Landmark Railway Structures Buildings & Bridges (IR-LS)". For the same railways have to identify, collect and compile information of all such structures. CE/Works of each Railway is nominated to pilot this work on behalf of PCE. While collecting such information following precautions should be taken.

a) Construction details, cost, when built, major works done afterwards, i.e. historical details.

b) Technical details, span, type, area, length, usage, etc.

c) Photographs should be of good quality ~ 18 Megapixel or more; to be taken in day and/or night as the case; to be taken at such time of day when angle of light is favourable for good photographs.

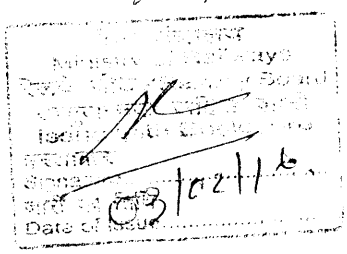
All above compilations should be sent to Board by 31.03.2016.

2/2/2016

(B.P. Awasthi)
Executive Director Track (P)
Railway Board

प्रतिलिपि/Copy to:-

1. AM/CE , AM/Works for kind information.
2. Adviser Bridge , Adviser (L&A) – for kind information.
3. EDCE(B&S) – I and EDCE(B&S) – II for information and necessary action.
4. EDCE(Plg), EDCE(G), ED(L&A)-I, ED(L&A)-II, EDTK/M, EDTK/MC, ED(Works), ED Proj (Monitoring), ED(W&P) for information.



(172)

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

No. 2011/Track-1/5(1)/8 New Delhi 12.02.2016.

Principal Chief Engineers,
Northern Railway, New Delhi.
North Eastern Railway, Gorakhpur.
East Central Railway, Hajipur.
South Eastern Railway, Kolkata.
Western Railway, Mumbai.
South Central Railway, Secunderabad.
Southern Railway, Chennai.

Sub: Planning of welding of rails in Stationary Flash Butt welding Plants and movement of long rails from BSP after commissioning of new rail rolling mill.

Ref: This office letter of even no. dated 22.12.2015.

1. A meeting was held in this office for welding of rails in Stationary Flash Butt Welding plants of zonal railways and planning of supply of rails from Bhilai Steel Plant after commissioning of new rail rolling mill at Bhilai. Minutes of the meeting duly approved by Board were sent for taking necessary action vide above referred letter. It was conveyed that all existing stationary flash butt welding plants will continue with necessary repair/replacement except Meerut FBWP and will be used for secondary renewal of rails by carting the released rails from site to these stationary flash butt welding plants and making the long panels there after flash butt welding. These plants will also be used for welding of new rails as per need.

2. In this reference, it is desired that necessary repair/ replacement works may be planned in these Stationary Flash Butt Welding plants so that welding work for secondary renewal of rails and for new rails as per requirement may progress without any hindrance and these welding plants are kept in proper working and functional order.

12.02.2016

(Manoj Garg)
Director/Track(P)
Railway Board.

Copy to : CAOs of all zonal railways-for information and necessary action please.

(173)

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

सं/**No. 2009/TMS/3/Rly./Meetings** दिनांक/**Date,** 25.02.2016

Principal Chief Engineer (s),

1. Central Railway, CST, Mumbai-400001
2. East Central Railway, Hajipur Bihar 844101.
3. East Coast Railway, Bhubaneswar -364001
4. Eastern Railway, Fairly place, Kolkata 700 001
5. North Central Railway, Allahabad- 211001
6. North East Frontier Railway, Maligaon, Guwahati 78101
7. North Eastern Railway, Gorakhpur- 273012
8. North Western Railway, Jaipur- 302017
9. Northern Railway, Baroda House, New Delhi.
10. South Central Railway, Rail Nilayam, Secunderabad-503721.
11. South East Central Railway, Bilaspur-495004
12. South Eastern Railway, Garden Reach, Kolkota
13. South Western Railway, Hubli 580027
14. Southern Railway, Park Town, Chhenai-600003
15. West Central Railway, Jabalpur-482001
16. Western Railway, Church Gate, Mumbai- 400020

विषय/**Sub:** Augmentation of data regarding Level Crossings in Track Management System (TMS) Application.

Level crossings are critical components of Indian Railways. Management of level crossings is a challenging task due to its sheer numbers. Many times, they hog lime light due to variety of reasons and details are required on urgency. Moreover, large number of VIP references/Parliamentary questions are received concerning status of various level crossings. Further, various commitments are also given on the floor of the Parliament, in regard to level crossings which are needed to be monitored.

Therefore, in order to streamline the management of this critical component and also to ensure proper planning, it has been decided to augment the already available data on the TMS Application to make it comprehensive for proper management decision.

(174)

In this regard, as desired by Board (ME), database available in TMS Application has been upgraded and made comprehensive. As "TMS" has already been implemented in all division of Indian Railways, the LC related data has to be augmented as per Annexure attached herewith. Railways are advised to get the details regarding LC's augmented and completed by 15.03.2016 and compliance sent to Board.

संलग्न/Encl: As above

(B.P. Awasthi)
Executive Director Track (P)
Railway Board

प्रतिलिपि/Copy to :

1. GMs, All Indian Railways for kind information.
2. CAOs, All Indian Railways for kind information and providing data to open line during handing over.
3. AM/CE, AM/W, Advisor/Bridge, Advisor/Land for kind information.
4. ED/CE(Plg), ED/CE(B&S)-I, ED/CE(G), ED/L&A-I, ED/L&A-II, ED/Proj. Monitoring, ED/W&P, ED/Track(M), ED/Track(MC), ED/Infra(Civil), ED/Works for information.
5. ED/B&S-II, Railway Board for information & monitoring.

Annexure

Level Crossing Data Augmentation in TMS Application

A) Master:

Following details need to be provided only once as master entry.

1) **PWI In-charge:** PWI in-charge of the section has to update following LC details from his login ID.
   a) Name of Member of Parliament. (select from the dropdown list)
   b) Category of Road. (National Highway/State Highway/ Major District Road/ Other District Road/ Village Road)
   c) Level Crossing constructed under (Accommodation/Deposit/ Private Siding)
   d) Year of Commissioning. (provide year)
   e) Whether Level Crossing is in busy station yard. (Yes/No)

2) **Sr. DEN/DEN:** Sr. DEN/DEN of the section has to update following LC details from his login ID.
   a) Whether RUB/LHS/Subway feasible. (Yes/No)
   b) If RUB/LHS/Subway feasible then its Sanction Status. (Sanctioned/Not Sanctioned)
   c) Status of manning. (This field will be available only if Level Crossing is UNMANNED and TVU>3000)
   d) Status of ROB sanction. (Sanctioned/Not Sanctioned)
   e) Possibility of Closure of LC (by Diversion/Direct closure etc./Not Possible)
   f) In case of Closure of LC possible then status of work (Sanctioned/Not Sanctioned) and if sanctioned then work details.
      I. Work Sanctioned in (Pink Book/LAW Book/Accommodation/Deposit/NHAI-MORTH/BOT)
      II. Year of Sanction of work. (User needs to provide year)
      III. Original Pink Book /LAW Book item No
      IV. Cost Bearing (Railway/Sharing/State etc.)
   g) Status of interlocking. (Interlocked/Not Qualifying/Not Sanctioned/Sanctioned)
   h) Work Details.
      I. Type of work sanctioned. (ROB/RUB & LHS/ROB+RUB & LHS)
      II. Work Sanctioned in (Pink Book/LAW Book/Accommodation/Deposit/NHAI-MORTH/BOT)
      III. Year of Sanction of work. (provide year)
      IV. Original Pink Book/LAW Book item No
      V. Cost Bearing (Railway/Sharing/State etc.)

B) Inspection

Following detail is to be entered by Level Crossing Inspecting Official during each inspection in the proforma already available in TMS for Level Crossing inspection.

I. LC closed minimum 12 times a day.

C) Report

Reports are available for all users.

a. Level Crossing-Constituency wise/State Wise/Division Wise etc.
b. Level Crossing-Constituency wise/State Wise/Division Wise etc. (ROB/RUB) sanctioned.

(1)
176

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

No. Track/21/2007/0110/AT Welding

New Delhi, dt. 03.03.2016

Principal Chief Engineers,
All Indian Railways.

Executive Director/Track-I,
Executive Director /QA(Civil),
Executive Director/(M&C),
RDSO,
Lucknow.

Sub: Extension of target date of implementation of Single Shot Crucible and improvement in AT Welding on Indian Railways.

Minutes of the meeting held on 22.02.2016 in Railway Board for reviewing progress of approval of Single Shot Crucible and improvement in AT Welding on Indian Railways are send herewith for further necessary action at your end.

In this regard it is mentioned that target date for implementation of single shot crucible has been extended upto 31.03.2016 i.e. all tenders of AT Welding after 01.04.2016 shall be invited only with single shot crucible by all the zonal railways.

RDSO is advised to expedite vendor development as committed in minutes of the committee held on 22.02.2016 and reflect the status in monthly PCDO to Board.

DA/ As above.

03.03.2016

(Manoj Garg)
Director Track(P)
Railway Board

(2)
172

Minutes of the meeting held on 22.02.2016 in Railway Board for Improvements in AT Welding on Indian Railways.

Present:

1. (S) Shri S.S.Narayanan, AM(CE)/RB,
2. B.P.Awasthi, ED/Track(P)/RB,
3. Satish Kumar Pandey, ED/CE(P)/RB,
4. Manoj Garg, Dir/Track(P)/RB,
5. Vipul Kumar, ED/Track-I/RDSO,
6. Shirish Kesarwani, ED/QAC/RDSO,
7. C.Sengupta, Addl.ED/M&C/RDSO,
8. Rajiv Kumar, Dir/Track-5/RDSO,
9. S.K.Maurya, Dir/QAC/RDSO.

SN.	Item	Action by
1.	**Development of Single Shot Crucible:** (i) AM(CE) emphasized that date of implementation of Single Shot Crucible has already been extended from 01.04.2015 to 01.10.2015 and further to 01.02.2016. (ii) Status of development of Single Shot Crucible was discussed. (a) ED/Track-I/RDSO informed that cases of development of M/s. ITC, Kanpur and M/s. Chakardhar Industries, Mumbai are in final stage and are likely to be finalised by 29.02.2016 for both 52kg and 60kg rail sections. (b) For M/s. Oberoi Thermit Pvt. Ltd., field trial and final inspection are likely to be completed for 52kg by 31.05.2016 and for 60kg by 30.04.2016. As per extent instructions, approval for 60kg can be issued only after approval of 52kg rail section. Therefore, the target date for development for both 52kg and 60kg is kept as 30.06.2016. (c) Development of M/s. HarshadThermit Industries, M/s. Sagar Infra Rail International Ltd., & M/s. Perfect Thermic &Engg. Works, Lucknow are in progress. Development of M/s. HarshadThermit Industries is likely by Feb 2017, of M/s. Sagar Infra by April 2017 and of M/s. Perfect Thermic &Engg. Works by May 2017. (iii) Accordingly, the cut in date for implementation of Single Shot Crucible is fixed as 01.04.2016.	ED/Track-I, ED/QA (Civil) & ED(M&C)/ RDSO/ All zonal railways

03.03.16
DTKIP

(148)

2.	**Development of New/Improved AT Welding Techniques:** (i) RDSO brought out that, due to phasing out of 52kg rails, difficulties are being faced in field trial of 52kg rail section required for development of new technique. As fatigue testing is done on 52kg rail section, field trial of 52 kg rail section becomes a prerequisite for approval of 60kg rail section. Hence, there is a need to review the procedure regarding testing, trial & approval of improvements in AT Welding for 52 kg and 60kg rail sections. It was proposed by RDSO that lab evaluation can be done for both the sections separately and fatigue testing be done for 52kg rail section as per existing practice. After successful fatigue testing of 52kg rail section, field trials of 60kg rail section can be taken up. On successful field trial of 60kg, approval of improvement in AT Welding for 60kg rail section can be issued and for 52kg rail section provisional approval can be issued with the condition that after award of work by Zonal Railway field trial of first 100 joints will be taken up which will be monitored by RDSO. After successful field trial of 100 joints, regular approval for welding for 52kg rail section will be issued by RDSO. However, production of 52kg rails is being stopped. Thus RDSO to also work out methodology to shift to complete testing (lab and field) using 60kg rails only in due course (within 2016-17). There was consensus on this proposal. RDSO may proceed with necessary modification in procedures as required. (ii) During final inspection of field trial of 100 nos. joints after passage of 10GMT of traffic only visual inspections are carried out and USFD testing is not being done at present. It was discussed that preferably all joints or certain percentage of joints should be tested by USFD testing. RDSO to do necessary amendments accordingly.	ED/Track-I, ED/QA (Civil) & ED(M&C)/ RDSO/ All zonal railways
3.	**Improvements in AT Welding:** Current status of items emphasized by Member Engineering in the last meeting with RDSO held on 28.10.2015 in Railway Board for improvement in AT Welding are as under: **(i) Revision of QAP:** ED(QA) Civil/RDSO confirmed that QAP of 6 firms have already been revised incorporating the specifications of raw materials and broad process of manufacturing. ED/Track-I/RDSO has apprised that a draft specification for raw material has been prepared by RDSO for all the vendors and uploaded on RDSO website on 16.02.2016 for comments from vendors. It was discussed that specification and source of raw materials may not be emphasized by RDSO instead every vendor should	ED/Track-I, ED/QA (Civil) & ED(M&C)/ RDSO/ All zonal railways

03.03.16
DTKIP

give their own specifications of raw material being used, various testing to be done on raw materials and process of working with details of duration of various processes. All these should be part of QAP approved by RDSO.

(ii) Videography of Welded Joints:

The steps involved in AT Welding should be documented by RDSO for protocol of videography. Accordingly, video of complete welding process should be made in the field while welding as per the protocol and be handed over to the concerned Section Engineer/P.Way to be kept safely as the record of the welding for specified period. Following points should be covered in the protocol of videography:

(a) Welder and Supervisor's Competency Certificate.
(b) Location chainage of weld being done (OHE Mast/Hectometer Post).
(c) Display of all equipments of welding.
(d) Portion number and condition of portion bag.
(e) Verticality of cuts and gap between the rails.
(f) Checking of alignment of rails- horizontal and vertical.
(g) Fixing of mould.
(h) General condition of air compressor and its pressure gauge reading during working.
(i) General condition of crucible and its lining.
(j) Time of heating in stop watch- starting and closing readings.
(k) Cutting of extra material by weld trimmer.
(l) Grinding of rail ends.

This list is not comprehensive and RDSO to prepare detailed method/protocol.

(iii) Sensitivity of Welding w.r.t Ambient Temperature:

RDSO has done five weld joints at an ambient temperature between 8^0 to 12^0C and necessary testing such as transverse load breaking test, hardness test and deflection test have been carried out. Now 5 weld joints to be made at an ambient temperature of around 40^0 C and above and tested accordingly by May 2016.

(iv) Smoothening Grinding at the bottom of AT Weld:

Bottom of AT Weld is left with rough surface and sharp edges. This may give rise to stress concentration. Thus it is necessary to grind this to smoothen out the surface etc. RDSO to work out methodology for same.

(v) Approval of Single Shot Crucible:

It has already been covered above.

(vi) Measurement of roasting temperature:

03.03.16
DTKIP

ED/QA(Civil)/RDSO apprised that M/s. ITC has conveyed that they have a temperature monitoring system at the exit of the kiln along with date record with the help of which they able to monitor. RDSO to ensure that this is part of QAP and should also be checked in their inspection. M/s. Oberoi Thermit had also installed continuous temperature measurement device fitted along with data logger. It is desired that efficacy of both these systems should be analysed by RDSO and this system should be installed in the manufacturing plants of all the approved vendors. This should be part of STR & QAP.

(vii) Specification for igniter:

It was informed that specifications for igniter are under preparation by the firms. It was emphasized that RDSO should expedite this item and details like length of the igniter and composition etc. of igniter to be framed early.

(viii) Bar coded Identity Card for Welders:

ED/Track-I/RDSO confirmed that Bar coded Identity Card for Welders have already been issued to welders of the firms and uploaded on TMS also. RDSO should advise to zonal railways that AT Welding in the field should be carried out by firm's welders having such valid bar coded I-cards only. Details of each and every welding should be entered by zonal railway in TMS.

On the similar pattern bar coded I-card should also be issued by TPP Lucknow and Thermit Welding Center, Vijayvada for departmental welders. RDSO to provide sample to these units.

(ix) Protective measures during rains & otherwise:

ED/Track-I/RDSO has shown a special rail/weld guard of 625mm length, 335 mm width and 205mm height but it needs improvement. A protector during rain should also be designed and prepared. Hood as prescribed to be used in case of post weld heat treatment of 110 UTS rails as mentioned in para 5.4 of Manual for Flash Butt Welding of Rails- Revised 2012 and post weld cooling of 110 UTS alloy steel rail joints and Head Hardened rails as mentioned in para 5.1 of Manual for Fusion Welding of Rails by the Alumino –Thermic Process- Revised 2012 can also be used on regular basis for AT Welding of non-HH rails also. Work needs to be done in this regard.

(x) Pre-heating temperature measurement:

(a) ED/Track-I/RDSO informed that M/s. ITC has a thermometer to measure the preheating temperature but the firm has refused to share its details which is not acceptable. Details of any equipment/process have to be provided by firm and RDSO should have complete details of same. This has to be ensured from Vendor. ED/QA/C also needs to follow up this item.

03.03.16
DTKIP

	(b) A laser thermometer which is contact less is available in the market in the range of Rs. 15000-20000 which has better accuracy in measuring temperature. RDSO should check its efficacy, correctness and ease of use in field. (c) Another contact type of thermometer was shown by RDSO. Temperature records taken by this thermometer at 50mm, 70mm & 90mm from rail end were shown by RDSO but there was anomaly in this temperature data which should be checked by RDSO again.It was also mentioned that it is very difficult to measure temperature of rail end inside the mould. Therefore, a correlation should be made at about 90mm from the end of the rail. (d) RDSO shall review comprehensively the subject matter keeping earlier studies done by M&C Directorate on subject and submit action plan in this regard.	

03.03.16

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

No. Track/21/2007/0110/AT Welding

New Delhi, dt. 03.03.2016

Principal Chief Engineer,
Northern Railway, New Delhi.
South Central Railway, Secunderabad.

Sub: Issuance of Bar coded Identity Cards cum Competency Certificates to departmental welders of Zonal Railways.
Ref: (i) This office letter of even no. dated 03.03.2016.
(ii) Director/Track/RDSO's letter no. CT/Welding/Policy dated 01.03.2016.

1. In the item no. 3 (viii) of minutes of the meeting held on 22.02.2016 in Railway Board for reviewing progress of approval of Single Shot Crucible and improvement in AT Welding on Indian Railways issued vide this office letter dated 03.03.2016, it was mentioned that Bar coded Identity Card for Welders have already been issued to welders of the firms by RDSO and uploaded on TMS also. Now AT Welding in the field should be carried out by firm's welders having such valid bar coded I-cards only by Zonal railways. Details of each and every welding should be entered by zonal railway in TMS.

2. On the similar pattern bar coded I-cards cum Competency Certificates should also be issued by TPP Lucknow and Thermit Welding Center, Vijayvada for departmental welders of all Zonal Railways. RDSO to provide sample of bar coded I-cards cum Competency Certificates to these units.

3. Zonal Railways to ensure that each and every welding in the field is carried out by firm's welders as well as railways departmental welders having such valid bar coded I-cards only and details of welding is entered by zonal railways in TMS.

03.03.16

(Manoj Garg)
Director Track(P)
Railway Board

Copy to:

(i) PCEs/All Indian Railways- for information & necessary action please.
(ii) ED/Track-I/RDSO/LKO- for information & necessary action please.

(193)

GOVERNMENT OF INDIA/BHARAT SARKAR
MINISTRY OF RAILWAYS/RAIL MANTRALAYA
(RAILWAY BOARD)

No.2011/TK-II/22/11/4/Policy **ND, dt. 27.04.15**

Principal Chief Engineers,
All Zonal Railways.

Sub:-Sale of released serviceable surplus 52 kg PSC sleepers for use of private parties.

Ref:-(i)Board's letter of even number dated 10-03-2015
(ii)CE/TP/CR's letter No.W.632.T.2W.MD.Genl. dated 24-04-2015.

Attention is invited to para 3.0(i) of Board's aforesaid letter dt. 10.3.15 wherein it was mentioned that the reserve price for sale of serviceable sleepers to private parties may be decided by Zonal Railways in consultation with associate finance. However, it has come to notice of Board that certain Zonal Railways are misconstruing the contents of this letter to interpret that reserve price of sleeper should be fixed as per the same mechanism as laid down to fix reserve price of released serviceable rails in Railway Board's circular dated 06.01.1981.

In this regard, it is clarified that reserve price of the released sleepers is not to be worked on the basis of formula being used for fixing reserve price of released rails as given in aforesaid circular dt. 06.01.1981 (the two products being not comparable eg metal v/s non-metal), but should be worked out case to case basis after duly taking into account the age, condition and residual life of released sleepers, so as to arrive at a reasonable reserve price.

(R.N. Singh)
Executive Director,Track(M)
Railway Board
Tel/Fax- 2338 2852

(184)

GOVERNMENT OF INDIA/BHARAT SARKAR
MINISTRY OF RAILWAYS/RAIL MANTRALAYA
(RAILWAY BOARD)

No. 2012/TK-II/22/7/3/Track fitting New Delhi, dt.25.05.2015

Principal Chief Engineers,
All Indian Railways.

Chief Administrative Officers,
All Indian Railways.

Sub: Revised PVC formula for ERC-Mk III and Mk V
Ref: SAG Committee's report submitted vide letter No.18-S/16/CAO/C/Review of tender/ Policy/TS dated 23-03-2015.

1.0 Various representations have been received from Zonal Railways and Manufacturers of ERC, regarding the problems being faced by them with the current PVC formula for ERC, which is linked to RINL's published prices of 20.64mm spring steel, because the same are not being updated regularly by RINL for quite some time now.

2.0 The aforesaid issue being urgent, was referred to a three Member SAG Committee, which has formulated and recommended a revised PVC formula vide letter under reference dated 23-03-2015 (copy enclosed). The same has been examined in Board and has been approved in consultation with Finance Directorate of Railway Board. Zonal Railways may adopt the same for all future tenders.

3.0 This issues with the concurrence of Finance Directorate of Railway Board.

DA: As above

(Vinod K. Tripathi)
Director Track (M)
Railway Board
Tel/Fax- 23389161

(ISE)

NORTHERN RAILWAY
CONSTRUCTION ORGANISATION
(Engg. Deptt.)

Headquarter office,
Kashmere Gate,
Delhi

No. 18-S/16/CAO/C/Review of tender/Policy/TS

Dated: 23-03-2015

The Executive Director/TM,
Railway Board, Rail Bhawan,
New Delhi

Sub:- Review of Tender conditions related to Procurement of P.way items.

Ref.:- Railway Board's letter No.2012/TK/II/22/7/3/Track fitting dated 21.11.2014

*****

With reference to your above mentioned letter, Recommendation of SAG committee for the PVC formula of ERC Mark-III and Mark-V duly signed by all members of committee is sent herewith for further necessary action.

(S.C.Jain)
Chief Engineer/Const/East
For Chief Admn.Officer/Const

Copy to:-

1. Shri A.K.Jha, Chief Engineer/TS,WR,Church Gate,Mumbai
2. Shri R.K.Gupta, Chief Track Engineer/TS,NWR, Near Jawahar Circle, Malviya Nagar,Jaipur.

(185)

Annexure-III

PRICE VARIATION FORMULA FOR ERC-Mk-III & ERC-Mk- V

The accepted rate will vary with variation in the monthly price indices in accordance with following price variation formula:

P1 = P0 x (10 + 65 x S1/S0 + 17 x L1/L0 + 8 x F1/F0) /100 – Ma

P1 = Escalated / de-escalated basic unit rate

Where

P0 = Accepted basic unit rate (net of all MODVAT Credits available to the supplier as prevalent during the month just preceding the month in which tender was opened).

S1 = Wholesale Price Index for "Iron and Semis" as prevalent at the time of 10 days prior to call of inspection of ERCs (finished goods) as per Economic Advisor, Ministry of Industry website http://eaindustry.nic.in as per series 2004-05.

S0 = Wholesale Price Index for "Iron and Semis" as prevalent during the month just preceding the month in which tender was opened, as per Economic Advisor, Ministry of Industry website http://eaindustry.nic.in as per series 2004-05.

L1 = All India Consumer Price Index for Industrial workers as prevalent at the time of 10 days prior to call of inspection of ERCs (finished goods) as per Labour Bureau, Ministry of Labour website http://labourbureau.nic.in

L0 = All India Consumer Price Index for Industrial workers as prevalent during the month just preceding the month in which tender was opened, as per Labour Bureau, Ministry of Labour website http://labourbureau.nic.in

F1 = Wholesale Price Index for "Fuel and Power" as prevalent at the time of 10 days prior to call of inspection of ERCs (finished goods), as per Economic Advisor, Ministry of Industry website http://eaindustry.nic.in as per series 2004-05.

F0 = Wholesale Price Index for "Fuel and Power" as prevalent during the month just preceding the month in which tender was opened, as prevalent during the month just preceding the month of Inspection, as per Economic Advisor, Ministry of Industry web site http://eaindustry.nic.in as per series 2004-05.

Ma= Variation in MODVAT to be passed on to purchaser as per MODVAT formula below:

MODVAT FORMULA:

The accepted contract rate is net of all net of all MODVAT Credits available to the supplier as prevalent during the month just preceding the month in which tender was opened. All MODVAT credits available on inputs as prevalent during the month just preceding the month in which tender was opened will be fully retained by the supplier in addition to the contract rates. Any variation in MODVAT after the month just preceding the month in which tender was opened and during the currency of the contract will be to the purchaser's account. Till such time as the admissibility of the MODVAT remains confined to those inputs that were taken into account as prevalent during the month just preceding the month in which tender was opened, the variation in MODVAT that will accrue to the purchaser

will be worked out as per the following formula:-

Ma = 65 x P0 (S1/S0 x E1/100 – E0/100)/100

E1 = Rate of Excise duty prevalent at the time 10days prior to call for inspection of ERCs (finished goods).

E0= Rate of Excise duty prevalent during the month just preceding the month in which tender was opened.

The increase / decrease on account of above inputs will be advised every quarter by the supplier to the paying authority who after due verification of the same, shall arrange payment towards Price variation as found due.

The decision of the President of India in regard to material and wage escalation under this clause shall be final and not be subject matter of legal dispute or arbitration.

****

24/3/2015
CE(TS)/WR

20.03.15
CE(C)/Ernakulam

20/03/15
CTE(TN/KRW)

(158

GOVERNMENT OF INDIA/BHARAT SARKAR
MINISTRY OF RAILWAYS/RAIL MANTRALAYA
(RAILWAY BOARD)

No. 2004/TK-II/22/5/7 Dated 07-07-2015

Principal Chief Engineer,
All Zonal Railways.

Executive Director Tk-II,
R.D.S.O.
Manak Nagar
Lucknow

Chief Administrative Officer,
All Zonal Railways.

Sub: IRICEN's Session No.15301 – Seminar for CE/TP, held on 7th & 8th May, 2015 – Clarification regarding "Serviceability Criteria of CGRSP"

Ref: i) IRICEN's letter No.151/15301 dated 02-6-2015.
(ii) Board's letter No.2004/Tk-II/22/5/7 dated 22-10-2013.

****

The issue, raised vide item No.62 of minutes of aforesaid Conference has been examined and it is clarified that "thickness of CGRSP when new" mentioned in table under para (iii) of Board's above referred letter dated 22-10-2013, should be read as 6.2mm, which is the stipulated thickness for new pad as per RDSO drawings (T-6618 & T-8327).

(Vinod K. Tripathi)
Director Track (M)
Railway Board
Tel/Fax- 23389161

Copy to:

Sr. Professor/Projects/IRICEN, Pune

C/C
09/07/15.

(116) (189)

GOVERNMENT OF INDIA/BHARAT SARKAR
MINISTRY OF RAILWAYS/RAIL MANTRALAYA
(RAILWAY BOARD)

No. 2012/TK-II/22/7/3/Track fitting Dated 23.07.2015

Principal Chief Engineer,
All Zonal Railways.

Chief Administrative Officer,
All Zonal Railways.

Sub: Revised PVC formula for ERC Mk-III and Mk-V

Ref: Board's letter No.**2012/TK-II/22/7/3 dated 25-05-2015**

****

Certain typographical errors have been pointed out by some Railways in the description of Fo and MODVAT in the subject PVC formula circulated vide Board's letter under reference

Above issue was referred back to the SAG committee, who after examining the same, have re-submitted the corrected PVC formula, which is enclosed as Annexure-1 for adoption

This issues with the concurrence of Finance Directorate of Railway Board.

DA: Annexure-1.

23/7/15

(Vinod K. Tripathi)
Director Track (M)
Railway Board
Tel/Fax- 23389161

PRICE VARIATION FORMULA FOR ERC-Mk-III AND ERC Mk-V

The accepted rate will vary with variation in the monthly price indices in accordance with following price variation formula:

$$PI = P0 \times (10 + 65 \times SI/S0 + 17 \times LI/L0 + 8 \times FI/F0) / 100 - Ca$$

PI = Escalated / de-escalated basic unit rate

Where

P0 = Accepted basic unit rate (net of all CENVAT Credits available to the supplier as prevalent during the month just preceding the month in which tender was opened).

SI = Wholesale Price Index for "Iron and Semis" as prevalent at the time of 10 days prior to call of inspection of ERCs (finished goods) as per Economic Advisor, Ministry of Industry website http://eaindustry.nic.in as per series 2004-05.

S0 = Wholesale Price Index for "Iron and Semis" as prevalent during the month just preceding the month in which tender was opened, as per Economic Advisor, Ministry of Industry website http://eaindustry.nic.in as per series 2004-05.

LI = All India Consumer Price Index for Industrial workers as prevalent at the time of 10 days prior to call of inspection of ERCs (finished goods) as per Labour Bureau, Ministry of Labour website http://labourbureau.nic.in

L0 = All India Consumer Price Index for Industrial workers as prevalent during the month just preceding the month in which tender was opened, as per Labour Bureau, Ministry of Labour website http://labourbureau.nic.in

FI = Wholesale Price Index for "Fuel and Power" as prevalent at the time of 10 days prior to call of inspection of ERCs (finished goods), as per Economic Advisor, Ministry of Industry website http://eaindustry.nic.in as per series 2004-05.

F0 = Wholesale Price Index for "Fuel and Power" as prevalent during the month just preceding the month in which tender was opened, as per Economic Advisor, Ministry of Industry web site http://eaindustry.nic.in as per series 2004-05.

Ca= Variation in CENVAT to be passed on to purchaser as per CENVAT formula below :

CENVAT FORMULA:

The accepted contract rate is net of all CENVAT Credits available to the supplier as prevalent during the month just preceding the month in which tender was opened. All CENVAT credits available on inputs as prevalent during the month just preceding the month in which tender was opened will be fully retained by the supplier in addition to the contract rates. Any variation in CENVAT after the month just preceding the month in which tender was opened and during the currency of the contract will be to the purchaser's account. Till such time as the admissibility of the CENVAT remains confined to those inputs that were taken into account as prevalent during the month just preceding the month in which tender was opened, the variation in CENVAT that will

accrue to the purchaser will be worked out as per the following formula:-

Ca = 65 x R0 (S1/S0 x E1/100 – E0/100)/100

E1 = Rate of Excise duty prevalent at the time 10 days prior to call for inspection of ERCs (finished goods).

E0= Rate of Excise duty prevalent during the month just preceding the month in which tender was opened.

The increase / decrease on account of above inputs will be advised every quarter by the supplier to the paying authority who after due verification of the same, shall arrange payment towards Price variation as found due.

The decision of the President of India in regard to material and wage escalation under this clause shall be final and not be subject matter of legal dispute or arbitration.

xxxxx

22/7/15

(19)

(192)

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

No.2014/TK-II/22/7/1(Policy)

New Delhi, dt.16.11.15

Chief Engineer(TS),
Western Railway,
Mumbai.

Sub:-Applicability of inspection charges and General Charges on sleepers being issued to construction projects and private parties.

Ref:- (i)Western Railway letter No. W 634/12/2/Vaman Private Parties dated 26.10.15.

(ii)Board's letter of even number dated 10.03.2015 & 30.09.1992.

1.0 The Zonal Railway has enquired about the applicability of inspection & general charges for the concrete sleepers being supplied to a private contractor of RVNL. The subject issue has been dealt vide Board's letter of even no. dated 10.03.2015, wherein it has been interalia stipulated that:

(i) *"For Railway projects being executed by RVNL, inspection charges @ 2% of sleeper price (after including taxes) and prorata siding charges, as stipulated in para 3(i) & 3(iii) of Board's above referred letter dated 30-09-1992, will be levied being part of the production cost of the sleepers borned by the Railway. The land license fee is recovered separately from the supplier (CSP) and therefore, the same is already loaded in the accepted rate and will not be added toward the sleeper cost."*

(ii) *"For sleepers being supplied to SPV/JVs or private parties as well as for sleepers being supplied to PSUs for private projects/JV projects/private sidings, the departmental charges @ 12.5% shall also be levied in addition to (i) above, as also stipulated in para 3(iv) of above referred letter dated 30-09-1992".*

2.0 Para (i) above is meant for sleepers being supplied by Railway's plants directly to RVNL as departmental material, cost of which is deposited by RVNL to Railways.

However, in the above referred case, the sleepers are being supplied to a private contractor and therefore, the departmental charges @ 12.5% shall also be levied in addition to charges mentioned in para (i) above.

(R.N.Singh)
Executive Director Track (M)
Railway Board
Tel/Fax- 23382852

Copy to: All PCEs for information.

(~~104~~)

— 113 —

(113)

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

No.2015/TK-II/22/11/4(Policy) New Delhi dt.31.12.15

Principal Chief Engineer,
All Zonal Railways.

Sub:-System Improvement: Procurement of concrete sleepers by RITES/IRCON and other private parties.

Ref:-(i) Board's letter no. 79/WTM/22/11/4/Vol. II parts dtd. 30.09.1992.
(ii) Board's letter no. 2014/TK-II/22/7/1 (Policy) dtd. 10.03.15 & 16.11.15.

Instructions/Guidelines for "Procurement of concrete sleepers by RITES/IRCON and other private parties" have been issued by Railway Board vide letter under reference. In terms of Para(1) of said instructions, no sleeper can be diverted by the concrete sleeper manufactured to outside parties without specific prior permission in writing from concerned Zonal Railways, failing which the purchaser Railway will be free to take penal action against the manufacturer.

However, Board's aforesaid letter dated 30.09.92 does not specifically indicate the quantum of 'penal action' against the defaulting firms. Therefore, for maintaining uniformity, it has now been decided that quantum of aforesaid "penal action" will be as under:-

"In case concrete sleeper manufacturer supplies sleepers to the outside parties without specific prior permission in writing from the PCE of Zonal Railway, the Railway will impose a penalty on defaulting manufacturer equivalent to twenty percent of the cost of sleepers which have been supplied to outside parties, in addition to recovering other leviable charges viz inspection charges, siding charges, departmental charges etc."

Above provision should be brought to the knowledge of all CSPs of your Railway.

This issues with the approval of Board (AM/CE).

d/c.

31/12/15

(Vinod K. Tripathi)
Director Track (M)
Railway Board
Tel/Fax- 23389161

St

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No.2013/Tk-II/22/7/4(Genl.Policy) New Delhi. Dated 08-03-2016

Director General.
RDSO.
Manak Nagar,
Lucknow

Director/IRICEN,
Pune.

Principal Chief Engineer
All Zonal Railways.

Sub: New Policy on development and adoption of new products/ technologies for track/bridge related items.

****

A well formulated policy for development and adoption of new products/technologies particularly for track/bridge items is essential to keep pace with the latest innovations and modern developments and also to meet the emerging functional needs of changing times, while maintaining requisite fairness & transparency in the process along with creation of an environment conducive to promotion of genuine innovations/developments.

Board (ME) in consultation with "Ministry of Law & Justice" and Finance of Railway Board has approved the subject policy, which is enclosed herewith for further necessary action.

(R.N. Singh)
Executive Director Track(Mod)
Railway Board.

DA: As above.

Copy to:

ED(B&S)-I, ED(B&S)-II, ED/CE(G), ED/CE(Plg.), ED(L&A)-I, ED(L&A)-II, ED(L&A)-III, ED(W&P), EDTK(M), EDTK(MC) EDTK(P), ED(Works), ED(Proj.& Monitoring) – Railway Board for information

(195

No. 2013/Tk-II/22/7/4(Genl. Policy) Date: 08-03-2016

Policy for Development/Adoption of new Products/Technologies for Track/Bridge Items

1.0 **Introduction:**

A well formulated policy for development and adoption of new products/technologies particularly for track/bridge or related items is essential to keep pace with the latest innovations and modern developments and also to meet the emerging functional needs of changing times, while maintaining requisite fairness & transparency in the process along with creation of an environment conducive to promotion of genuine innovations developments.

This new policy also aims to ensure that adoption and procurement of such product technology wherever decided, is done in as competitive manner as desirable.

2.0 **General:**

This policy procedure is primary meant for those new products /technology/designs, which are yet not used or proven on Indian Railway, but have the potential to be useful/ beneficial for it in respect of functional requirements and long term techno-economic, safety & other considerations.

The new products/technologies under consideration for adoption by IR, may either be protected under Patents/Intellectual Property Rights (IPR) of certain Firms/ manufactures or may not be protected. In addition, certain items might have been developed by RDSO/PSU/PU/Railways at their own or in association with industry, which might also be either patented/protected or non-patented. In case of adoption of patented products, their IPR may need to be acquired/licensed.

Many patented products/technologies (such as track machines, USFD testing machines, Fracture detection systems, Fastening systems, special sleepers, innovative materials designs, welding techniques, special rails, monitoring systems, special types of switches xings etc.), are already being used successfully over world railways and might be found to be useful for IR as well. However, to enable their adoption, it may not always be feasible/viable to acquire the IPR in all such cases, and instead, it may rather be prudent and economical to procure the products directly from OEMs through tendering system on the basis of generic specifications/ performance parameters, and the transfer of IPR will not be needed, as products will be procured directly from OEMs.

3.0 **Procedure:**

3.1 **Expression of Interest (EOI) / Request for Proposals (RFP):**

The fields/areas, where innovations/new products/new variations/new technology are being sought by IR, will be proposed by RDSO/zonal Railways/concerned Directorate's of Board or a special committee. If considered desirable, these may also be deliberated in the

annual meeting of "Track Standards Committee" "Bridge Standards Committee". All such fields/ products/areas/items as well the respective performance parameters/ broad generic specification will be approved by Board

An open ended RFP will be uploaded on the RDSO's website outlining IR's functional requirements, broad generic specifications/performance parameters/ acceptance criteria etc separately for each field/product technology, to solicit the proposals from interested Firms/OEMs etc. in the prescribed proforma for short-listing the same for undertaking lab testing/field trials.

For an entirely new area/field/ technology, about which sufficient information/ data is not available with IR/RDSO, initially an EOI may be called to invite and study various such products/technologies already being used on world Railways. Based on the information so collected, the performance parameters/ broad generic specifications suiting the requirements of IR will be framed by RDSO and approved by the Board, after which the RFP will be floated.

3.2 **Preliminary Assessment**: The proposals received against RFP will be examined on quarterly basis. For example, against a particular RFP, proposals received during January-March quarter, will be assessed during April-June quarter, and proposals received during April-June quarter, will be assessed during July-Sep quarter. Thus, preliminary assessment of a proposal will generally be completed by RDSO within 3-4 months of receipt.

The concerned directorate in RDSO will examine the proposal vis-à-vis functional requirement/ specifications/ performance parameters mentioned in the RFP and will carry out a preliminary assessment of the same on these aspects based on the data/documents submitted by the Firm including Lab testing reports. Wherever required, further information/clarification can be sought from the Firm by giving reasonable time. In case, certain proposals are received in Railway Board, the same will also be forwarded to RDSO for further necessary action as above.

In case, the offered product/technology is claimed to be the patented one already, the patent registration details and documents/drawings submitted in support of the same, shall also be scrutinized by RDSO to verify that the offered product/process/technology/design is same as the drawings/description given in the patent registration/ certificates. Only a registered patent under the Patents Act will be accepted as a basis to confer ownership right of the offered product/process/technology for the purpose of incentivisation of the Firm in case of adoption in future.

In case, the offered product/technology is claimed to be non-patented or free from any IPR, the concerned vendor/Firm/manufacturer at the time of offering such product /technology/design, will also be required to submit an undertaking(notarized affidavit) that the same has been developed by them and is not copied from an existing product design/drawing, it does not violate any valid/live patent and the same is not

patented developed by any other Firm individual, and in addition, the Firms will also be required to indemnify IR/RDSO/PUPSI against any possible dispute/litigation in future pertaining to IPR infringement of any product/technology/design. It shall also be incorporated in such an undertaking that the Firm is fully aware of the fact that non-patented products technologies shall not be entitled for any incentive or preferred treatment in case of its adoption by IR. The standard proforma for an undertaking/indemnity for this purpose has been prepared in consultation with Legal Dte and enclosed herewith as Annexure-I.

3.3 **Detailed Evaluation:** After preliminary assessment, if the offered product/ technology/Design is prima-facie considered suitable vis-à-vis the requirements/specifications parameters laid down in RFP, the same will be taken up for detailed evaluation by RDSO by getting further necessary details from the Firm including samples wherever required. The Firm will also be required to submit the budgetary quote in a sealed cover, for the purpose of comparative analysis of the new product vis-à-vis existing in-use alternatives as well as similar new products offered by other Firms. Detailed evaluation report will be prepared by RDSO and will interalia include suitability assessment with respect to IR's functional needs and performance parameters/specifications, laboratory testing (wherever applicable), reliability maintainability analysis wherever required, and comparative analysis including cost comparison vis-à-vis the existing in-use products /similar new products offered by other Firms etc. Detailed Evaluation, wherever warranted, will be completed within two months of completion of preliminary assessment, and detailed evaluation report will be submitted by RDSO to Board alongwith its recommendation whether or not to undertake limited field trials including the trial scheme and acceptance criteria.

3.4 **Unsolicited product /technology**:

Sometimes, Firms may approach IR/RDSO offering new Product/technology, though the same might not have been solicited/sought in the RFP. However, if the same is considered prima facie useful for IR, it may be taken up for evaluation as per stipulations of para- 3.2 & 3.3 above. After detailed evaluation, if any such Product/technology is considered fit for field trials, the RDSO will seek permission from Board for issuing EOI/RFP for soliciting proposals of similar Products/technologies from other prospective vendors/OEMs alongwith the proposed performance parameters (&/or broad specifications, if necessary) drawn on the basis of specific requirement of IR. Thereafter, the same procedure as elaborated in para-3.2 to 3.14 shall be followed.

3.5 **Limited Field Trials:**

The limited field trial may be ordered in limited quantity on 5 to 10 zonal railways, covering diverse geographical, climatic and operating conditions, for a period of one year, so that the product efficacy is evaluated covering one full weather cycle during one year. The trial should generally cover stretches with sharp curves, steep gradients, heavy density

routes coastal areas etc., so as to represent different operating conditions which the product process technology/design is likely to encounter during regular use.

3.5.1 On receipt of RDSO's recommendation for conducting limited field trials, the concerned Directorate in Board's Office will scrutinize the proposal and put up the same to Board alongwith its views regarding conducting limited trials. Only those proposals of limited field trials, which have a financial implication of more than Rs. 50 Lacs (ie value of procurement for conducting limited trial) will require finance directorate's concurrence in Board. While approving the proposal for trials, the Board may also nominate a particular Zonal Railway/PU/PSU as nodal body to procure the new product process/technology/Design collectively for/on behalf of all zonal Railways where trials have been ordered, so as to avoid multiple tendering & delays on this account. Due process will be followed by Railways/PUs/PSUs for this purpose. The cost of such trials will be charged to track renewal works/Bridge works estimates. If specific provision is not available in sanctioned estimate, the same will be charged against the 'contingencies' provision, with the approval of estimate sanctioning authority.

3.5.2 On ordering of the limited field trial by Board as brought out above, RDSO will get the authenticated drawings, technical details/specifications etc., Patent/IPR details(wherever applicable) of the product from the Firm alongwith its written consent for issuing of the drawings to zonal railways for the purpose of initiating procurement/trials. Thereafter, the RDSO will issue the 'trial drawings'/SER and trial/monitoring scheme etc. to concerned Railways and also advise nodal Railway/concerned Railways the budgetary quote/ undertaking furnished by the Firm, for their guidance. Above process will be completed by RDSO within one month of issue of orders for limited trials by Board.

CTEs of Railways in consultation with RDSO will select the section/locations for conducting trials. As far as possible, these should be on busy routes/higher axle load routes, coastal areas, sharp curves, steep gradients etc. If two or more similar/same type of products of different make are to be put on trial, then they should preferably be laid in the same or adjoining block sections/locations for fair and objective comparison.

Within three months of issue of trial drawings/specifications/trial scheme etc. by RDSO the nominated/concerned zonal Railway(s)/PU/PSU will place the P.O. for procuring the product/process/technology design and also ensure that the same is supplied and laid/installed at nominated locations within reasonable time (2-3 months) from the date of issue of P.O., for initiating field trials.

The relevant details of all such product technology wherein trials have been ordered (viz: broad description, IPR status as claimed, broad performance/other parameters as found during lab evaluation, claimed life etc.), will be posted by the RDSO on its website from time to time. Summary of all ongoing trials will be reported by RDSO in their monthly PCDO to Board. Zonal Railways will also post the trial details on TMS website under the module '*Materials on Trial*' and monitor the same regularly. Summary of all ongoing trials will be reported by PUs in their monthly PCDO to Board (MI).

3.5.3 RDSO will coordinate the field trials and receive the trial reports from Zonal Railways PUs/PSUs from time to time in the prescribed format as per the trial scheme proposed by RDSO & approved by Board, and conclude the trials objectively immediately on completion of one year of laying/installation of product. RDSO will prepare the evaluation report on the basis of feedback reports received from zonal Railways/PU/PSUs from time to time and observations of RDSO officials during field visits/inspection and will forward the same alongwith its conclusions vis-à-vis the acceptance criteria and recommendations to Railway Board whether or not to go for extended trials.

For products/technologies already in use for reasonably long time on some of the world Railways & proven successful (satisfactory performance certificate should be available from such Railway(s)), the extended trial may be dispensed with by the Board at the recommendation of RDSO. In such cases, the special committee as stipulated in para-3.7 below will submit its final evaluation report on the basis of limited field trials.

3.6 **Extended Field Trials:**

In other cases, wherever the results of limited trials are found to be satisfactory with respect to acceptance criteria, the extended trials may be considered by Board, which shall be for maximum two/three years duration. The proposals of extended field trials having financial implications more than Rs. 50 Lacs (ie value of procurement for conducting extended trial) shall require concurrence from finance directorate of Board. The extended trials should generally be ordered on all zonal Railways for upto 5% of estimated annual requirement of IR in terms of quantity and should cover heavy density routes, higher axle load routes, high speed routes, coastal areas/ stretches with sharp curves, steep gradients etc. CTE of Railway will select the sections/locations for conducting trials in consultation with RDSO. If two or more similar/same type of products of different make are to be put on extended trial, then they should preferably be laid in the same or adjoining block sections or similar locations for fair & objective comparison. RDSO will coordinate the field trials and receive the trial reports from Zonal Railways PUs/PSUs from time to time in the prescribed format as per the approved trial scheme and will ensure that the extended trial gets completed within stipulated duration (2/3 years, as the case may be).

3.7 **Final Evaluation Report by Special Committee after completion of Field Trials:**

Immediately on completion of the field trials, a special committee consisting of concerned ED/RDSO and CTEs of the Railways where trials were conducted, will prepare the final evaluation report after considering all the reports received from zonal Railways/PU/PSUs including observation of RDSO officials during field visits/inspection, and will prepare the final evaluation report, which will inter-alia include suitability assessment with respect to IR's functional needs, laboratory evaluation reports, field trial reports, inspection reports, reliability/maintainability analysis wherever required and comparative analysis including techno-economic/safety related comparison analysis vis-à-vis the existing in-use products/similar new products offered by other Firms and the Overall performance vis-à-vis acceptance criteria etc. The final evaluation report of same/similar type of products (having

same application usage) should generally be submitted together alongwith comparative analysis so as to facilitate conclusion regarding most suitable/best suited product technology for regular adoption on IR.

3.8 **Adoption for Regular Use:**

Special committee's recommendations will be considered in the Railway Board. Some of the products /technology/designs may also be referred by Board to the 'Track/Bridge Standards Committee', if needed, for seeking their recommendation regarding adoption of the same on IR. The proposal for the adoption of a new product/ technology/design will be got concurred from finance directorate and put up to the Board for the final approval. Initially, the Board's order for adoption will be communicated only to RDSO.

3.9 **Agreement for Transfer of IPR & Incentivisation for patented products/technologies:**

IPR transfer through an agreement will be required for patented products/technologies. After receiving orders of Board for adoption of a patented product/technology, the patentee Firm and RDSO will sign the agreement to enable transfer of the IPR to RDSO, so that the drawings/specifications/STR of the product can be issued by RDSO and also to authorize RDSO to develop new vendors for manufacturing of the product. The incentive to the Firm in-lieu of transfer of IPR will also form part of this agreement. The standard proforma of 'IPR agreement' 'Patent License agreement' duly vetted by 'Ministry of Law', is enclosed herewith as Annexure-2.

Incentivisation will be as per the already approved model vide Railway Board letter no. 99/Track-II/22/7/6 dated 19.9.08, with the modification that the extent of the assured orders will be 60% of total tendered quantity in first year, 50% in second year & 40% in third year. The three year period of incentivisation will be reckoned from the date of award of first tender for such product anywhere on IR after the signing of agreement.

There may be cases where the patentee (patent holder) is not interested in supplying the product himself, then in such cases, the royalty model of the incentivisation can also be adopted wherein the Railway's vendors who will receive the procurement orders from IR for a patented product through the normal tendering system, will pay a small percentage (say 2-3 %) of the purchase value to the patent holder. The incentivisation will be for a limited period of time say 3-5 years(reckoned from the date of first such tender). The exact royalty percentage & period will be decided at the time of adoption on case to case basis by Railway Board with finance concurrence.

3.10 **<u>Adoption of products in cases where IR do not need to acquire the patent, and the patented product can be procured directly from OEMs based on generic specification</u>**.

Sometimes patented products from many OEMs are available in the market, all of which meet the generic specification performance parameters and functional requirements stipulated by Railways, though they might have been manufactured through different processes/technologies and patented by different Firms. However, in such cases, it may not

(201)

be feasible necessary or economical to acquire the patents of all such products, and those meeting the laid down criteria/generic specifications can be approved/empanelled based on lab testing/field trial. Thereafter, the procurement can be made from OEMs through competitive bids as per approved generic specification/performance parameters. Thus, there would be no need to acquire IPR/patent of any such product.

For such products, RDSO with the approval of Board will prepare the generic specification and acceptance criteria based on IR's functional requirements and invite EOI/RFP. Offered products will go through the lab testing/field trials, as the case may be. The generic specification may be further reviewed/revised based on the experience gained during the lab testing/field trials. After adoption, such products can be procured from the OEMs empanelled by RDSO on the basis of lab testing/field trial of product as per generic specification and laid down acceptance criteria. Minimum three Firms should be empanelled by RDSO before initiating full-fledged procurement of the product so as to ensure adequate competition. The EOI/RFP for further empanelment shall always remain open ended, so that new Firms can apply for empanelment anytime. However, in cases, where the empanelment of Firms is not done or minimum three Firms are not available on panel, the product may be procured through open tender based on approved generic specification/performance parameters.

3.11 **Non-patented products/technologies:**

After receiving orders of Board for adoption of a non-patented product/technology, the RDSO will publish its intent to issue drawings and adopt the product/technology on IR, through its web site & prominent newspapers, with a view to invite objection/representation, if any, within a period of 60 days. In case of receipt of any objection, the issue will be examined & decided by RDSO and wherever considered necessary, the issue may be referred to Rly Board. In case, no objections are received within stipulated period of 60 days, the RDSO will ask the Firm to give its unconditional consent for issue of the drawings/STR, vendor development and procurement/use of the product on IR through other vendors. The Firm will also be required to indemnify IR/RDSO/PU/PSU against any possible litigation/disputes/liabilities in future pertaining to IPR of the product notwithstanding earlier no-objection received in response to the public notice. Undertaking shall also be obtained from the Firm that IR/RDSO/PU/PSU reserves the right to use the product as deemed fit including procurement of the said product/process/technology only when reasonable number of vendors for the same have been developed so as to guard against any monopoly situation.

No incentive shall be admissible to the Firm offering non-protected/non-patented product/process/technology/design, as it can not claim their legal ownership. However, the very adoption and procurement of such products by IR may be enough motivation and incentive for the concerned Firm/vendor/manufacturer.

The standard pro-forma for aforesaid undertaking/ indemnity/consent has been prepared by Board in consultation with Legal Directorate, and enclosed as Annexure-I.

3.12 **Vendor Development**:

After completion of above formalities (para 3.9 or 3.11, as the case may be), the RDSO will initially issue only the "vendor development drawings" alongwith STR etc. and seek applications from prospective manufacturers/vendors for registration/inclusion in the approved vendor list, for the new product/process/technology.

(202)

3.13 **Issue of final drawings/STR/Specifications by RDSO**

After development & approval of reasonable number of vendors in Part-II category (say minimum 2 & preferably 3), the RDSO will approach the Board for permitting issuance of final drawings. The RDSO will also prepare and submit the special instructions/ guidelines for maintenance of the product during service, for the guidance of field officials.

3.14 **Scope & Extent of Procurement** :

After receipt of confirmation from RDSO regarding development of reasonable number of approved vendors(minimum 2 & preferably 3), the Board will permit the issuance of final drawings/STR etc by RDSO and also issue the instructions to zonal railways for regular procurement of the product/process/technology/design including its scope & extent of usage proliferation.

4.0 Notwithstanding any of above provision, it will be open for Board(ME), to order limited trial of any new item. On completion of such trials, reports will be submitted by RDSO /zonal Railway/PSU/PU, as the case may be for further necessary action.

5.0 Above policy issues with the concurrence of Finance Directorate of Railway Board, legal vetting of 'Ministry of Law & Justice' and approval of Railway Board (ME).

Enclosures: Annexure-1 and Annexure-2

(R.N.Singh)
ED Track(Modernisation)
Railway Board

ANNEXURE-I

(To be given on non-judicial stamp paper of appropriate value, duly notarized.)

203

UNDERTAKING FOR UNCONDITIONAL TRANSFER OF DRAWINGS/SPECIFICATIONS/STR & OTHER DOCUMENTS TO RDSO/IR AND INDEMNITY

I---------- son of ---------- aged about ----------resident of ---------- the deponent, do hereby solemnly affirm and undertake as under:

1. The deponent is the authorized signatory of the(name of firm/company...) as per the documents enclosed.

2. The deponent declares on behalf of the firm/company that it has developed the ..... (*product description*) hereinafter referred to as "the product" and approached the Indian Railway/RDSO for field trial and use of these products on Indian Railways.

3. The deponent declares that the aforesaid product developed by them is not a patented product and not protected under any copyright, brand, IPR etc. and currently there are no pending legal or any other disputes pertaining to the product. It is also declared that the offered product does not infringe IPR of any other firm/body etc. and has not been developed by some other firm.

4. On behalf of the firm/company, the deponent hereby indemnifies RDSO/IR and its authorized agents/vendors (which interalia includes the Zonal Railways, Public Sector Undertakings under Ministry of Railways and vendors developed by RDSO/Indian Railways) fully at all times from any possible litigation, claims, its cost and expenses/financial liability arising out of any violation/infringement of patent/registered design/trademark/IPR, of any product/item of any other firm/company/venture/organization located both in India and abroad for the duration of use of the said product on the Indian Railways/its units.

5. The deponent declares that firm has agreed for unconditional transfer of drawings/ specifications STR and other documents of the product to RDSO/IR with consent for further issuing them by RDSO/IR as their own drawings/documents, without claiming any preferential treatment/incentive for the same and understands that for this, they are not entitled for any incentive in future. Firm has also authorized RDSO to make any changes/improvisation therein.

6. The deponent further declares that they shall not have any objection if RDSO/IR develops vendors for supply of aforesaid product and the product is used in what so ever manner and quantity by Indian Railways without deponent having any claim in any form.

7. The deponent further declares that the firm/company is willing to unconditionally provide all logistic support and technical knowhow, for development and production of the product, to RDSO/IR and its vendors as and when required.

Deponent

Verification

I declare that the contents of aforesaid Para 1 to 7 are true to my knowledge and belief, and nothing has been concealed. I understand that furnishing of any false information in above undertaking or concealing information will lead to legal and administrative action against the firm/company.

Deponent

ANNEXURE-II

PATENT LICENCE AGREEMENT

(204)

This PATENT LICENCE AGREEMENT made this..... day of.... Two thousand fifteen by and between

(_name of firm _), a company incorporated under the provisions of the Companies Act, 1956 and having its registered office at Century Towers, 5th Floor, 45 Shakespeare Sarani, Kolkata 700 017 (hereinafter referred to as the **'LICENSOR'** which expression shall, unless repugnant to the context of meaning thereof, be deemed to mean and include its successors, agents, representatives and assigns) of the ONE PART.

AND

THE PRESIDENT OF INDIA, represented through the Director General, Research Designs and Standards Organisation, Manak Nagar, Ministry of Railways Lucknow 226 011 having its principal place of business at Lucknow and includes Zonal Railways within the scope and meaning of Railways Act, 1989 including Public Sector Undertakings under Ministry of Railways (hereinafter, referred to as the **LICENSEE** which expression shall, unless repugnant to the context or meaning thereof, be deemed to mean and include its successors, agents, vendors, representatives and assigns) of the OTHER PART.

WHEREAS

a. The Licensor is a renowned company and a pioneer in the field of manufacturing railway track products in India.

b. The licensor herein is the true and legal owner/ proprietor of India Patent bearing No. ___ dated ___ in relation to a **"__(name of product)__"** (hereinafter, referred to as the **'Licensed Patent'** for use in railway track including tracks on rails.

c. The Research Designs and Standards Organisation, Manak Nagar, Lucknow, a premier Government Research Organization is tasked with research, designs and standardizing products/equipments and systems to be used by the Indian Railways, has conducted trials on the said "__(name of product) " (hereinafter referred as "ZRF) under various test conditions and found it to be suitable and advantageous to the needs of Indian Railways, which includes the Zonal Railways within the scope and meaning of Railways Act, 1989 including Public Sector Undertakings under Ministry of Railways.

d. The parties to this Agreement have jointly concluded that their respective needs and interest will be served by the grant of patent license from the Licensor to the Licensee for the manufacture and/or use of the Licensed Products, i.e. " (name of product) _" by the Licensee and/or its vendors, agents and suppliers.

In consideration of the aforesaid reasons and the mutual covenants herein contained, the parties herein enter into this Agreement on the following terms and conditions- (205)

1. DEFINITIONS AND INTERPRETATION

1.1 In this Agreement, including in the Recitals hereof, the following words, expressions and abbreviations shall have the meanings assigned to them in the clause, unless the context otherwise requires:

1.1.1 **"Agreement"** means this Agreement and any and all schedules and annexure attached to it or incorporated in it by reference.

1.1.2 **"Confidential Information"** shall include all disclosures, specifications, designs, plans, drawings, as disclosed in India Patent Specification No. ____ dated ____.

1.1.3 **"Effective Date"** shall mean the day of execution of this Agreement and notwithstanding anything to the contrary contained in any other clause, all rights and obligations of the parties of this Agreement shall take effect from the effective date.

1.1.4 **"Exclusive License"** shall mean a license granting Licensee the right to make/use/sell/procure the Licensed Products for the Indian Railways, including the Zonal Railways within the scope and meaning of the Railways Act, 1989 and also including Public Sector Undertakings under Ministry of Railways.

1.1.5 **"Licensed Products"** and or "Licensed Patent" shall mean the "_(name of product)_" as covered by the Indian Patent No. _____ dated _____.

1.1.6 "(name of product)__" shall mean all the components covered by the Indian Patent No. __ dated _____ but excluding the components already designed by RDSO and used by the Licensor in the system.

1.1.7 **"Territory"** shall mean the territory of India.

1.1.8 **"Use"** shall mean use for the purposes of the Indian Railways, including the Zonal Railways within the scope and meaning of the Railways Act, 1989 and also including Public Sector Undertakings under Ministry of Railways.

1.2 In this Agreement, unless the context otherwise requires,

1.2.1 For the purpose of this Agreement, where the context so admits, the singular shall be deemed to include the plural and vice versa and the words "include" and "including" shall be construed without limitation. 206

1.2.2 The headings and sub-headings are inserted for convenience only and shall not affect the construction and interpretation of this Agreement.

1.2.3 In addition to the terms defined above, certain other terms may be defined elsewhere in this Agreement and whenever such terms are used in this Agreement they shall have their respective defined meanings, unless the context expressly or by necessary implication otherwise requires.

2. REPRESENTATIONS AND WARRANTIES

2.1 The Licensor represents and warrants that (i) it is the owner of the entire rights, title and interest in and to the Licensed Patent, (ii) it has the sole right to grant *inter alia* licenses there under and (iii) it has not granted licenses there under to any other entity that would restrict the rights granted to Licensee, except as stated herein.

2.2 The Licensee understands and acknowledges that the Licensor, by this Agreement, make no representation as to the operability or fitness for any use / safety / efficacy of the Licensed Products.

2.3 Each Party to this Agreement hereby represents and warrants to the other side that:

2.3.1 It has full power and authority to execute, deliver and perform its duties and obligations under the terms and conditions of this Agreement;

2.3.2 It has taken all necessary action to authorize the execution, delivery and performance of this Agreement;

2.3.3 This Agreement constitutes a legal, valid and binding obligation enforceable in accordance with law and the terms and conditions herein;

2.3.4 This Agreement does not conflict with any existing rights and obligations of either Party under any other covenant.

3. LICENSE

3.1 The Licensor hereby grants to the Licensee an exclusive license to make, use, offer to sell and sell the Licensed Products within the territory of India for use of the Indian Railways. Such License shall include the right to incorporate the Licensed Products as components, sub-assemblies or sub-systems used by the Licensee and

of its agents and / or vendors but excluding the components already designed by RDSO and used by the Licensor in the system.

207

3.2 Additionally, the Licensor also hereby grants to the Licensee a non-exclusive license under the Licensed Patent to have the Licensed Products made/manufactured by any other manufacturer for use and / or sale by Licensee alone within the defined territory.

3.3 The Licensee shall have the right to exercise any license rights granted hereunder through any Subsidiary /Agent, and any reference to the Licensee shall be deemed to refer to any Subsidiary through which Licensee shall so exercise such licensed rights.

3.4 No license, immunity or other right is granted under this Agreement, either directly or by implication, estoppels, or otherwise:

3.4.1 other than under the Licensed Patent No. dated ;

3.4.2 with respect to any product other than the Licensed Products notwithstanding that such other product may incorporate one or more of the Licensed Product;

3.4.3 to third parties acquiring the Licensed Product from the Licensee and combining it with any other product, for the use of any such combination even if such product has no substantial use other than as part of such combination

3.4.4 for use of Licensed Products other than for the Purposes of the Indian Railways.

3.4.5 for use of the Licensed Products in Territories other than as defined.

3.4.6 To third parties including approved " (name of product) " manufacturers of the Licensee.

3.5 The Licensee shall inform the Licensor of the drawing numbers of the Licensed Products in case the Licensee releases a drawing from their system.

3.6 Orders for assured quantity will be placed on to the Licensor by the Indian Railways as per Railway Board's policy letters no. 99 LK-II 22/7/6 dated 19.09.08 and policy letter no. dtd. as far as price part is concerned.

3.7 Licensor shall provide manufacturing process of the product to the Licensee. Licensee officials shall have free access to the work premises of the Licensor at all

reasonable times for discussion or clarification of the manufacturing process of the product. Licensor shall assist Licensee officials in development of the product.

CONSIDERATION

4.1 In consideration of the License herein, the Licensee shall ensure that the Licensor shall be awarded contracts for manufacturing and/or supplying licensed product i.e. the "____ (name of product)____" as covered by Indian Patent No. ____, for the following committed quantities during the initial three years, to be reckoned from the date of opening of first tender for procurement of the product anywhere on Indian Railways:

(i) First year: 60% of the requirement for the year.
(ii) Second year: 50% of the requirement for the year.
(iii) Third year: 40% of the requirement for the year.

4.2 Without prejudice to the generality of the clause 4.1 above, the Licensee hereby undertakes that the committed quantities shall not be prejudiced by any process adopted by the Licensee with regard to the tender process or by quality control tests of the licensed products, which however, will be subject to the IRS Conditions & special conditions of the Contract (as applicable from time to time), mandatory for all the contracts in the Railways, while the Licensor undertakes and understands that only the Licensed products strictly complying with the Indian Patent No. ____ dated ____ and the quality/standards/specifications prescribed by the Licensee there for, shall be manufactured/supplied and acceptable to the Licensee.

4.3 The Licensee has been provided with the necessary drawings, technical specifications, Schedule of Technical Requirements (STR) by the Licensor.

4.4 As further consideration for the license, the Licensor shall take all care and steps necessary to maintain the Licensed Patent in force in the Registrar of Patents maintained by the Controller of Patents by payment of the requisite Government fees and any other dues as may be required for this purpose.

4.5 Any default of the Licensor and / or the Licensee to adhere to the obligations under this clause shall be considered to be a material breach of the present agreement.

4.6 "Notwithstanding anything contained in this agreement, the patentee Firm shall have no claim over Railways even if there is 'nil' or less quantum of procurement of the patented product during the period of assured order stipulated in clause 4.1 for any reason whatsoever.

5 TERM

5.1 The license granted herein shall remain in effect from the Effective Date till the expiry of the term of the Licensed Patent, unless earlier terminated under the provisions of this Agreement.

(209)

This Agreement can be terminated at any time within three years from the effective date only by mutual written agreement between the Licensor and the Licensee, upon 30 days written notice to all parties and subject to any terms herein, which survives termination.

5.3 After completion of three years the drawings, specification and schedule of Technical requirements will be the exclusive property of the licensee and the licensor will not have the right to terminate the agreement and withdraw the same.

5.4 If this Agreement is terminated for any cause

5.4.1 nothing herein will be construed to release either party of any obligation matured prior to the effective date of the termination;

5.4.2 after the effective date of the termination, the Licensee would still be bound by the provisions of clause 7.

6. ACCOUNTING AND AUDIT

6.1 With respect to the tendered quantity set forth in clause 4.1 above, the Licensee shall keep full, clear and accurate record and accounts for the Licensed Products for a period of three (03) years from the effective date.

6.2 Starting from the effective date, the Licensor shall have the right to annual statement of tendered quantities of the Licensed Products within 30 days of the end of each year. The Licensee shall maintain appropriate records for one (01) year after the each accounting year.

6.3 The Licensor shall have the right to audit, and during normal business hours, all such records and accounts for the Licensed products to the extent necessary after giving 15 days notice prior to such audit and also considering mutual convenience of the Licensor and Licensee. Such an audit, if done, shall be conducted at the Licensor's own expense.

"Explanation: Where the supply of Licensed Product is tendered, made to, or order is placed by a Zonal Railway including Public Sector Undertakings under Ministry of Railways, the term Licensee used in clause 6.1, 6.2 and 6.3 above, would mean and imply the concerned Zonal Railway including Public Sector Undertakings under Ministry of Railways, office, department, unit and /or the competent authority of that Railway including Public Sector Undertakings under Ministry of Railways."

7. RETURN WITHDRAWL OF INFORMATION

7.1 In the event of an early termination of the Agreement as envisaged in Clause 5.2, the Licensee hereby undertakes to return/ withdraw any and all tangible information including drawings, technical specifications, STR including any confidential information, which the Licensee may have been privy to, within 30 days of such termination.

8. INFRINGEMENT BY THIRD PARTIES

8.1 The Licensor will enforce the patent against infringement by third parties and shall be entitled to recovery from such enforcement. The Licensee shall not be entitled to any such recoveries and/or part thereof.

8.2 In any infringement suit or dispute, the parties herein, agree to cooperate fully with each other.

9. MARKING

9.1 The Licensee and or his agents/vendors must permanently and legible mark all Licensed Products manufactured and/or used by it under the terms and conditions of this Agreement with such marks as may be deemed fit by the Licensee.

10. NOTICES

10.1 All notices required or permitted to be given hereunder shall be in writing and shall be valid and sufficient if dispatched by registered AD or courier addressed as follows:

TO THE LICENSOR

Name and Address of the firm

TO THE LICENSEE

The Director General, Track
Research Designs and Standards Organisation
(Government of India -Ministry of Railways)
Manak Nagar, Lucknow 226 011, U.P., India

Where the supply of Licensed Product is tendered, made to, or order is placed by a Zonal Railway the notices envisaged in this clause shall be addressed to the General Manager and/or to the competent authority of that Railways.

(211)

Provided, that either Party may change the above mentioned address by a notice to the other party. Any and all correspondence and contacts pursuant to this Agreement shall thereafter be routed to the changed address

11. GOVERNING LAW

11.1 This Agreement shall, in all respects, be governed by and construed in all respects in accordance with the prevailing laws of India

12. ARBITRATION

In the event of any question, dispute, claim or differences as to the scope, ambit, interpretation and/or import of this Agreement or the provisions contained herein, or any claim arising out of, or under this Agreement, the matter shall be referred for arbitration under the Arbitration and Conciliation Act, 1996; provided:-

12.1 The demand for arbitration shall specify the matters which are in question, or subject of the dispute or difference as also the amount of claim item wise. Only such disputes(s) or difference(s) in respect of which the demand has been made, together with counter claims or set off, given by the Railway, shall be referred to arbitration and other matters shall not be included in the reference.

12.2(a) The Arbitration proceedings shall be assumed to have commenced from the day, a written and valid demand for arbitration is received by the Railway.

12.2(b) The Licensor shall submit his claim stating the facts supporting the claims along with all the relevant documents and the relief or remedy sought against each claim within a period of 30 days from the date of appointment of the Arbitral Tribunal.

12.2(c) The Railway shall submit its defence statement and counter claim(s), if any, within a period of 60 days of receipt of copy of claims from Tribunal thereafter, unless otherwise extension has been granted by Tribunal.

12.2(d) The place of arbitration would be within the geographical limits of the Division of the Railway where the cause of action arose or the Headquarters of the concerned Railway or any other place with the written consent of both the parties.

(212)

12.2(e) No new claim shall be added during proceedings by either party. However, a party may amend or supplement the original claim or defence thereof during the course of arbitration proceedings subject to acceptance by Tribunal having due regard to the delay in making it.

12.2(f) If the Licensor does/do not prefer his/their specific and final claims in writing, within a period of 90 days of receiving the intimation from the Railways that the final bill is ready for payment, he/they will be deemed to have waived his/their claim(s) and the Railway shall be discharged and released of all liabilities under the contract in respect of these claims.

12.3 **Obligation During Pendency of Arbitration** - Work under the contract shall, unless otherwise directed by the Railway, continue during the arbitration proceedings, and no payment due or payable by the Railway shall be withheld on account of such proceedings, provided, however, it shall be open for Arbitral Tribunal to consider and decide whether or not such work should continue during arbitration proceedings.

12.4(a) The Arbitral Tribunal shall consist of a Panel of three Gazetted Railway Officers not below JA grade or 2 Railway Gazetted Officers not below JA Grade and a retired Railway Officer, retired not below the rank of SAG Officer, as the arbitrators. For this purpose, the Railway will send a panel of more than 3 names of Gazetted Railway Officers of one or more departments of the Railway, which may also include the name(s) of retired Railway Officer(s) empanelled to work as Railway Arbitrator to the Licensor within 60 days from the day when a written and valid demand for arbitration is received by the GM. Licensor will be asked to suggest to General Manger at least 2 names out of the panel for appointment as Licensor's nominee within 30 days from the date of dispatch of the request by Railway. The General Manager shall appoint at least one out of them as the Licensor's nominee and will, also simultaneously appoint the balance number of arbitrators either from the panel or from outside the panel, duly indicating the 'presiding arbitrator' from amongst the 3 arbitrators so appointed. GM shall complete this exercise of appointing the Arbitral Tribunal within 30 days from the receipt of the names of Licensor's nominees. While nominating the arbitrators it

(213)

will be necessary to ensure that one of them is from the Accounts department. An officer of Selection Grade of the Accounts Department shall be considered of equal status to the officers in SA grade of other departments of the Railway for the purpose of appointment of arbitrator.

12.4(b) If one or more of the arbitrators appointed as above refuses to act as arbitrator, withdraws from his office as arbitrator, or vacates his/their office/offices or is/are unable or unwilling to perform his functions as arbitrator for any reason whatsoever or dies or in the opinion of the General Manager fails to act without undue delay, the General Manager shall appoint new arbitrator/arbitrators to act in his/their place in the same manner in which the earlier arbitrator/arbitrators had been appointed. Such re-constituted Tribunal may, at its discretion, proceed with the reference from the stage at which it was left by the previous arbitrator (s).

12.5 The arbitral Tribunal shall have power to call for such evidence by way of affidavits or otherwise as the Arbitral Tribunal shall think proper, and it shall be the duty of the parties hereto to do or cause to be done all such things as may be necessary to enable the Arbitral Tribunal to make the award without any delay. The Arbitral Tribunal should record day-to-day proceedings. The proceedings shall normally be conducted on the basis of documents and written statements.

12.6 While appointing arbitrator(s) under sub-clause above, due care shall be taken that he/they is/are not the one/those who had an opportunity to deal with the matters to which the contract relates or who in the course of his/their duties as Railway servant(s) expressed views on all or any of the matters under dispute or differences. The proceedings of the Arbitral Tribunal or the award made by such Tribunal will, however, not be invalid merely for the reason that one or more arbitrator had in the course of his service opportunity to deal with the matters to which the contract relates or who in the course of his/their duties expressed views on all or any of the matters under dispute.

12.7(a) The arbitral award shall state item wise, the sum and reasons upon which it is based. The analysis and reasons shall be detailed enough so that the award could be inferred there from.

12.7(b) A party may apply for corrections of any computational errors, any typographical or clerical errors or any other error of similar nature occurring in the award and interpretation of a specific point of award to tribunal within 60 days of receipt of the award

(214)

12.7(c) A party may apply to tribunal within 60 days of receipt of award to make an additional award as to claims presented in the arbitral proceedings but omitted from the arbitral award

12.7(d) In case of the Tribunal, comprising of three Members, any ruling or award shall be made by a majority of Members of Tribunal. In the absence of such a majority, the views of the Presiding Arbitrator shall prevail

12.7(e) Where the arbitral award is for the payment of money, no interest shall be payable on whole or any part of the money for any period till the date on which the award is made

12.7(f) The cost of arbitration shall be borne by the respective parties. The cost shall inter-alia include fee of the arbitrator(s), as per the rates fixed by the Railway Board from time to time and the fee shall be borne equally by both the parties. Further, the fee payable to the arbitrator(s) would be governed by the instructions issued on the subject by Railway Board from time to time irrespective of the fact whether the arbitrator(s) is/are appointed by the Railway Administration or by the court of law unless specifically directed by Hon'ble court otherwise on the matter.

12.7(g) Subject to the provisions of the aforesaid Arbitration and Conciliation Act 1996 and the rules there under and any statutory modifications thereof shall apply to the arbitration proceedings under this clause

13. JURISDICTION OF COURTS

13.1 The courts of the Lucknow, or from where the acceptance of the tender and orders for supply of the Licensed Products has been issued, shall alone have jurisdiction to decide any dispute arising out of, or in respect of this Agreement.

(215)

14. MISCELLANEOUS

14.1 The Licensee shall not assign this Agreement, or any rights under it, nor delegate any of its obligations to a third party. Any attempt to do so shall be void.

14.2 This Agreement shall not be binding upon the parties until it has been signed herein below by or on behalf of each party. No amendment or modification hereof, shall be valid or binding upon the parties unless made in writing and signed as aforesaid.

14.3 If any section/part of this Agreement is found to be invalid, illegal or unenforceable in any respect for any reason, the validity, legality and enforceability of any such section part in every other respect and the remainder of this Agreement shall continue in effect so long as the Agreement still expresses the intent of the parties. However, if the intent of the parties cannot be preserved, this Agreement shall be wither renegotiated or terminated

14.4 This Agreement embodies the entire understanding of the Parties hereto, with respect to the subject matter hereof, and the transactions contemplated hereby, and supersedes any and all oral representations and statements by either party or any prior agreements between the Parties.

14.5 The failure at any time of either Party to demand strict performance by the other of any of the terms, covenants or conditions set forth herein, shall not be construed as a continuing waiver or relinquishment thereof, and either Party may, at any time, demand strict and complete performance by the other of such terms, covenants and conditions.

14.6 In connection with this Agreement, as well as all transactions contemplated by this Agreement, each Party agrees to execute and deliver such additional documents and instruments, and to perform such additional acts, as may be necessary or

appropriate, and upon which the Parties may agree to effectuate, carry out and perform all the terms, provisions and conditions of this Agreement, and all such transactions.

14.7 The Parties hereto, shall dutifully perform all covenants of this Agreement in letter and spirit and shall otherwise act with due diligence and in good faith.

14.8 Nothing contained in this Agreement shall be construed as:

14.8.1 restricting the right of Licensor or its affiliates, agents/assigns to make, use, sell, lease or otherwise dispose of any particular product or products not herein licensed;

14.8.2 conferring any license or right with respect to any trademark, trade or brand name, a corporate name of either party of any of their respective subsidiaries, or any other name or mark or contraction, abbreviation or simulation thereof.

14.9 Anything contained in this Agreement to the contrary notwithstanding, the obligations of the parties hereto, shall be subject to all laws, both present and future, of the Government having jurisdiction over either department, agency, or court thereof, and to acts of war, acts of public enemies, strikes, or other labor disturbances, fires floods, acts of God, or any causes of like of different kind beyond the control of the Parties, and the Parties hereto shall be excused from any failure to perform any obligation hereunder to the extent such failure is caused by any such law, order, regulation or contingency but only so long as said law, order, regulation or contingency continues.

IN WITNESS WHEREOF the parties hereto have hereunto set and subscribed their respective signatures the day and year first hereinabove written

SIGNED SEALED AND DELIVERED BY SIGNED SEALED AND DELIVERED BY

(217)

Name and address of the firm

Witness

Name:
Address:

For THE PRESIDENT OF INDIA,
Ministry of Railways, represented through
The Director General,
Research Designs and Standards Organisation.

Witness

Name:
Title: EXECUTIVE DIRECTOR (Track-II)

Name:
Address:

Government of India
Ministry of Railways
Railway Board

No.91/Track III/Tk/41 Vol.5

New Delhi, dated06.04.2015

The Principal Chief Engineer,
North Central Railway
Allahabad.

Sub: Reporting of accidents involving Track Machines.

Ref: Railway Board's letters of even number dated 11.10.2010, 29.12.2010 and 01.10.2012 on the subject.

An incident of fire in track machine - CSM-917 occurred on Allahabad division on 04.04.2015 leading to severe traffic disruptions and damage to the machine. Though the incident took place at around 1450 hrs. on 04.04.2015 no immediate advice was given either to EDCE(P) or EDTk(MC). The preliminary details of damage to machine and the site particulars were not made available even till noon time of 06.04.2015.

Instructions exist that in case of accident, immediate information is required to be given by CTE of the Zonal Railway to the EDCE(P) and in case of accident involving Track Machines, also by CE/TM to ED/TK(MC)/Railway Board. However, in this case, neither the CTE nor CE/TM had given any information to Railway Board.

The non-communication of information is viewed as a serious lapse. Concerned Officers may be counselled to ensure immediate intimation of such occurrences as per the extant instructions.

(S.S. Narayanan)
Addl. Member (CE)
Railway Board

Copy to: PCEs, All Indian Railways (except NCR) for strict compliance of Board's instructions on the subject.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No. 2007/Track-III/TK/21 Vol. II

New Delhi, dt.12.06. 2015.

The Chief Engineer (TMC),
All Zonal Railways,

The Exe. Director (TM),
RDSO, Manak Nagar, Lucknow.

Sub: Minutes of PCEs' Conference held in Railway Board on 22th April, 2015.

With reference to the above, extracts of minutes of PCEs' Conference held in Railway Board on 22th April 2015 are reproduced below for necessary action:-

Item no. 3.1: It should be ensured that all stipulated inspections at various levels are being done accurately as per nominated frequency. If required the stipulated frequency of inspections may be reviewed but with proper justification. The defect in tracks should be diagnosed during inspections. All Principal Chief Engineers to confirm that all stipulated inspections are being done at stipulated frequency at various levels with quality.

Item no. 3.4: A check list should be prepared before doing an inspection. It will ensure fruitful inspection and all important items will get covered during inspection.

Item no. 3..8: Principal Chief Engineers during their inspection should guide field officials about how to do a good job. List of important items of inspection should be prepared and circulated to field for compliance.

Item no. 3.21: Erection of permanent benchmarks, alongside the track to ensure proper and stable track geometry, is required to be done. This will act as reference point to check misalignment of track after tamping by machine.

Item no. 3.26: Usage of Traffic blocks should be maximized by planning other works also in the shadow of same blocks. Chief Track Engineer may be nominated

nodal officer for planning the execution of activities requiring blocks by different deptt.

220

Item no. 3.29: Tamping of turnouts should be done by opening turnouts.

Item no. 3.30: Quality of work done by track machine needs to be improved. In this regard, the field engineers must ensure that stipulations laid down in IRPWM & IRTMM are followed scrupulously. Measurements of track geometry before machine work and proper markings on permanent benchmarks for desired correction in track geometry are to be ensured. During the work, field engineers have to be watchful to see that the machine is working as per the laid down operational parameters. Post machine work, measurement of track measurements must be ensured without fail to assess the quality of output achieved.

Item no. 3.31: Instructions have already been issued for provision of IP based camera, for monitoring working of track machines. Installation of these cameras should be expedited.

Item no. 3.32: Quality can be ensured only by adopting proper and detailed inspections. In this regard a check-list of inspections of machines at the start of the day should be made out. Track Machine Organization should develop proper check-lists for operators/supervisors of track machines as well as for JEs/SSEs (P.Way). Check-lists developed by NR may be improved upon to suit local systems of working.

Item no. 3.33: Machine blocks should be planned in such a manner that all maintenance activities needing blocks can be planned simultaneously in shadow blocks. Bridge inspection and maintenance vehicles currently available with NR & WCR need to be utilized for inspections in shadow of track machine blocks.

Item no. 3.34: Feasibility of laying of Turnouts with Road cranes should be explored.

12/06/15

(T.K. Pandey)
Director Track (MC)
Railway Board.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

(221)

No.2015/Track-III/TK/Misc. New Delhi, dt.09.07.2015

The Chief Engineer (TMC),
All Zonal Railways,
Except NWR.

Sub: Innovations on Zonal Railways- May, 2015..

The innovations reported in MCDOs of North Western Railway regarding "T-28 style working with Hydra Cranes" is enclosed for information and necessary action.

(T.K.Pandey)
Director Track (MC)
Railway Board.

DA: as above.

Government of India
Ministry of Railways
(Railway Board)

No. 2015/E&R/3(T)/2 New Delhi, Dated 26.06.2015

The General Managers,
All Zonal Railways,

Sub: Innovations on Zonal Railways - May, 2015

The Innovations reported in MCDOs of Zonal Railways for May, 2015 are enclosed for information please.

(Jai Prakash Sindhu)
Director, Efficiency & Research (S&T)
Railway Board

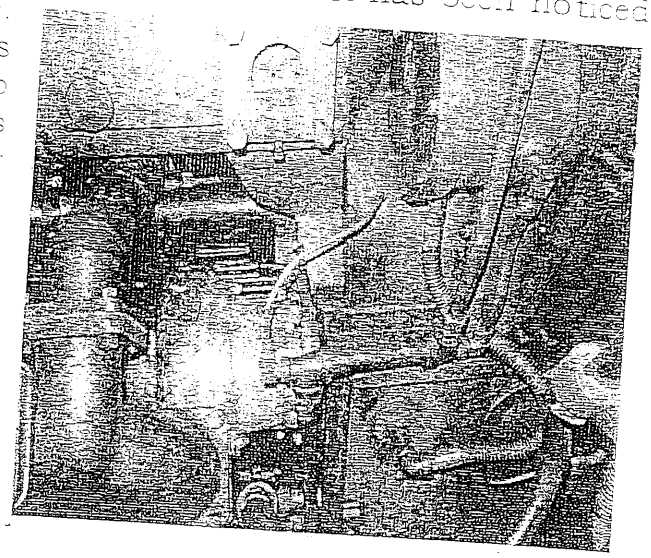
Encl: As above

Copy to:

AM(CE) AM(Elect.) AM(Mech.) AM(PU)

North Central Railway

- **Water pump modification:** There are two types of water pump fitted on locomotives having 42 and 46 nos. gear teeth. It has been noticed that water pump having 42 nos. gear teeth are failing due to less lubrication. RPM of water pump in gears having 42 teeth is about 300 more than water pump having 46 gear teeth which results in increase in temperature. To reduce the temperature, a modification has been done in Diesel Loco Shed, Jhansi by providing extra pipe for lubrication. This has helped in reducing the above mentioned failure. (Picture -6)



Picture -6

North Western Railway

- **T-28 style working with Hydra Cranes:** Points & Crossings are normally laid/dismantled by T-28 machine or manually. T-28 machine is helpful in laying/dismantling complete turnout. In the section of Keshav Ganj (KVJ) - Swarupganj (SRPJ), complete turnouts were assembled outside and laid with the help of 05 to 08 nos. of Hydra Cranes (as per site conditions) all operating in synchronous. Similarly, wherever dismantling of turnout was involved, plain track panel of equal length was made ready and laid by the use of 05 to 08 Hydra cranes. These arrangements not only reduced labour requirements drastically but were very helpful in laying turnout accurately. Such arrangements of laying points with hydra cranes were used in parallel at multiple locations in the same or multiple yards in the same traffic block. This innovation was the key to success in the NI work of KVJ-SRPJ in completing works in advance of schedule.

Southern Railway

- **Energy efficient ceiling fans:** 24 Nos. Energy Efficient Brushless DC (BLDC) fans in place of 230 Volts, AC ceiling fans have been provided first time in Southern Railway at Coimbatore Junction as a trial measure. The fans are manufactured by M/s. Versa Drives Private Limited, Coimbatore-24 in the brand name of **Superfan**. These fans are basically energy efficient, low voltage, brushless DC fans, driven by electronically controlled inverter. It is light in weight and consumes about 40% less power than the conventional AC ceiling fan and having better air delivery.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

(221)

No.2007/Track-III/TK/10 Vol. II

New Delhi, dt.20.07.2015.

The Chief Engineer/TMC,
All Zonal Railways

Sub: Maintenance of Logbook of Track Machines.

While considering the proposals on condemnations of Track Machines sent by Railways, shortfalls have been noticed in the following areas.

i) Maintenance of Logbooks.
ii) Initiation of process for condemnations of Track Machines, after prolonged idling/stabling of Track Machines.

Railways are therefore advised to maintain the "Logbook" adhering to the stipulated maintenance requirements as per IRTMM. Railways are also advised to avoid stabling of track machines for long periods.

(T.K.Pandey)
Director Track (MC)
Railway Board.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No. 2011/Track-III/TK/5

New Delhi, dt. 10 .08.2015

The Chief Engineer (TMC),
All Zonal Railways.

Sub: Electrically operated final drive/work drive Z.F. Gear Box.

Ref: M/s. Plasser India's letter no. PIF/15/320 dt. 15.07.15

Please find enclosed herewith a copy of M/s. Plasser India's letter on the subject for information and necessary action.

It is advised for strict compliance of the instructions as mentioned in the Firm's letter during maintenance/breakdown of Electrically operated final drive/work drive Z.F. Gear Box on Tamping Machines.

(T.K. Pandey)
DirectorTrack (MC)
Railway Board

DA: as above.

PLASSER INDIA PVT. LTD.

RAILWAY MACHINERY MANUFACTURERS

Quality System

Quality Endorsed Company

Factory : 13th Milestone Mathura Road, Gurukul Indraprastha Estate P. O. Amar Nagar Faridabad - 121 003 (Haryana)
Phones : ++91-129-4292500 (25 Lines) -91-9810029485, 9810294853
Fax : ++91-129-4292626-27-28
E-Mail : plasser@plasserindia.com
CIN : U74899DL1978PTC008974

The Chief Engineer/TMC
Western Railway,
Headquarter Office
Churchgate
Mumbai- 400 020.

Ref : PIF/15/320
Date : 15-07-2015

Subject: Electrically operated final drive/ work drive ZF gear box.

Reference: Your letter no: W641/3/39 Dated 15/06/2015

Dear Sir,

With reference to the above letter, please find enclosed a write up explaining the difference between manual and hydraulic control used for final and work drive engage and disengage mechanism, their checking schedules and part numbers of spares that are to be checked and replaced, if required.

In Duomatic 8091 the root cause of the failure was that valve which is used to operate the work drive engage assembly was malfunctioning, due to which engage body was frequently engaging and disengaging during work. Because of this cylinder piston rod got stuck in disengage position. Hence work drive engage was not taking place. The assembly was cleaned and the defective valve was replaced and thereby the work drive problem was rectified.

Thanking You, We remain,

Yours faithfully,

For PLASSER India Pvt. Ltd.

Mahesh Gaur,
Manager (Servicing and Training).

CC: The Director Track Machines, Railway Board, New Delhi

Regarding failure of Z F gear box engaging assemblies.

There are two type of engage/disengage system of final drive /work drive in the Z F drive gear box is provided in tamping/DGS machines.

1. **Manual control**: Engaging - disengaging of final drive operated manually. and work drive engaging-disengaging operated mechanically by pneumatic cylinder. When machine is being towed the final drive must be disengaged for the safety of gear box. By disengaging final drive, the ZF drive gear box get disconnected from axle gear box and no gear rotates within the ZF gear box, while machine is being towed, hence no harm to the ZF gear box. But due to any reason if the final drive is not disengaged and machine is being towed, then due to absence of clutch pressure (engine shut down), no lubrication will takes place inside the gear box and hence damages may occur within the gear box.

2. **Hydraulically control**: In this system final drive engage is operated by clutch pressure (developed by ZF gear box) through a cylinder, which is controlled by electrical solenoid valve. In normal condition when engine is not running, then final drive turns in to disengaged position by default and gets engaged only when engine is running and drive key is "ON". This system was introduced to avoid human error while machine is being towed, and is working successfully worldwide. Proper engage and disengage position is observed by LED indication and should be followed strictly. In case of any abnormality observed, it should be attended immediately. If the indication is overlooked or bypassed, than the failure may occur due to excessive wear and tear to the engager body.

Note: - It has been observed that the machines are not being towed frequently on Indian railway. So hydraulically control system is not very useful. Hence the final drive and work drive engage/disengage can be changed over to manual system.

Z F Gear Box (4WG-65 II) Drive Assemblies

To avoid such sudden breakdown the following may be followed.

a. 1000 hrs/1 yr. schedule for final drive engaging assembly's check.

Remove the final drive assembly from the gear box and check the following:

1. Retaining ring "pos no 384". It should be in proper position & not in damaged condition.
2. Cylindrical pin "pos no 225" for free movement.
3. Sliding pad "pos no 230" for excessive wear and tear.
4. O-rings "pos no 364, 390 and 410" for any damage.

b. 1000 hrs/1 yr. schedule for work drive engaging assemblies.

Remove the work drive assembly from the gear box and check the following:

1. Retaining ring "pos no 670". It should be in proper position & not in damaged condition.
2. Cylindrical pin "pos no 605" for free movement.
3. Sliding pad "pos no 610" for excessive wear and tear.
4. O-rings "pos no 660, 664 and 680" for any damage.

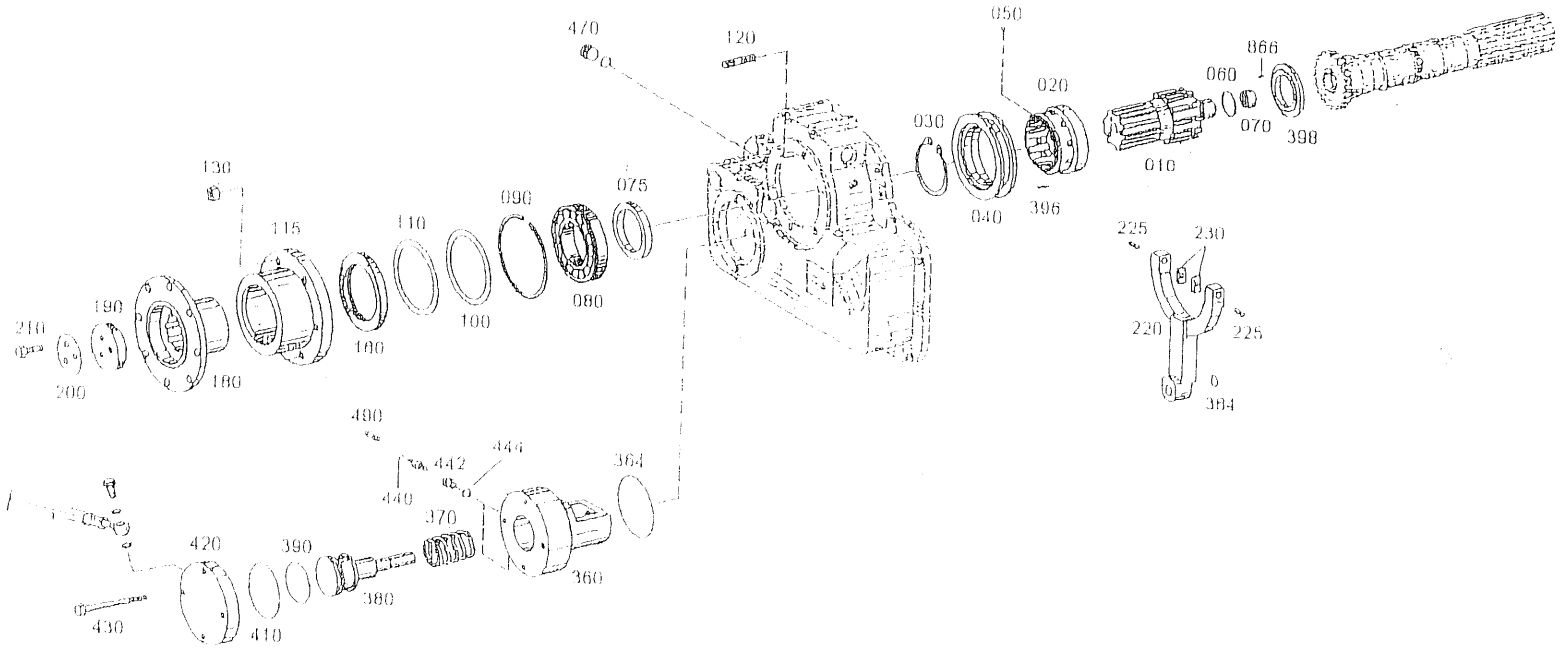
Note: -Regularly observe the engaging and disengaging indication, of the both assemblies and if any abnormality is found, then check the electrical circuit. If electrical circuit is found ok, then problem is within the assembly. Repeat the schedule as mentioned above.

parts list: 4616 000 260 4 WC-65 II / / PLASSER & THEURER

figure: 4616 105 004 01 OUTPUT

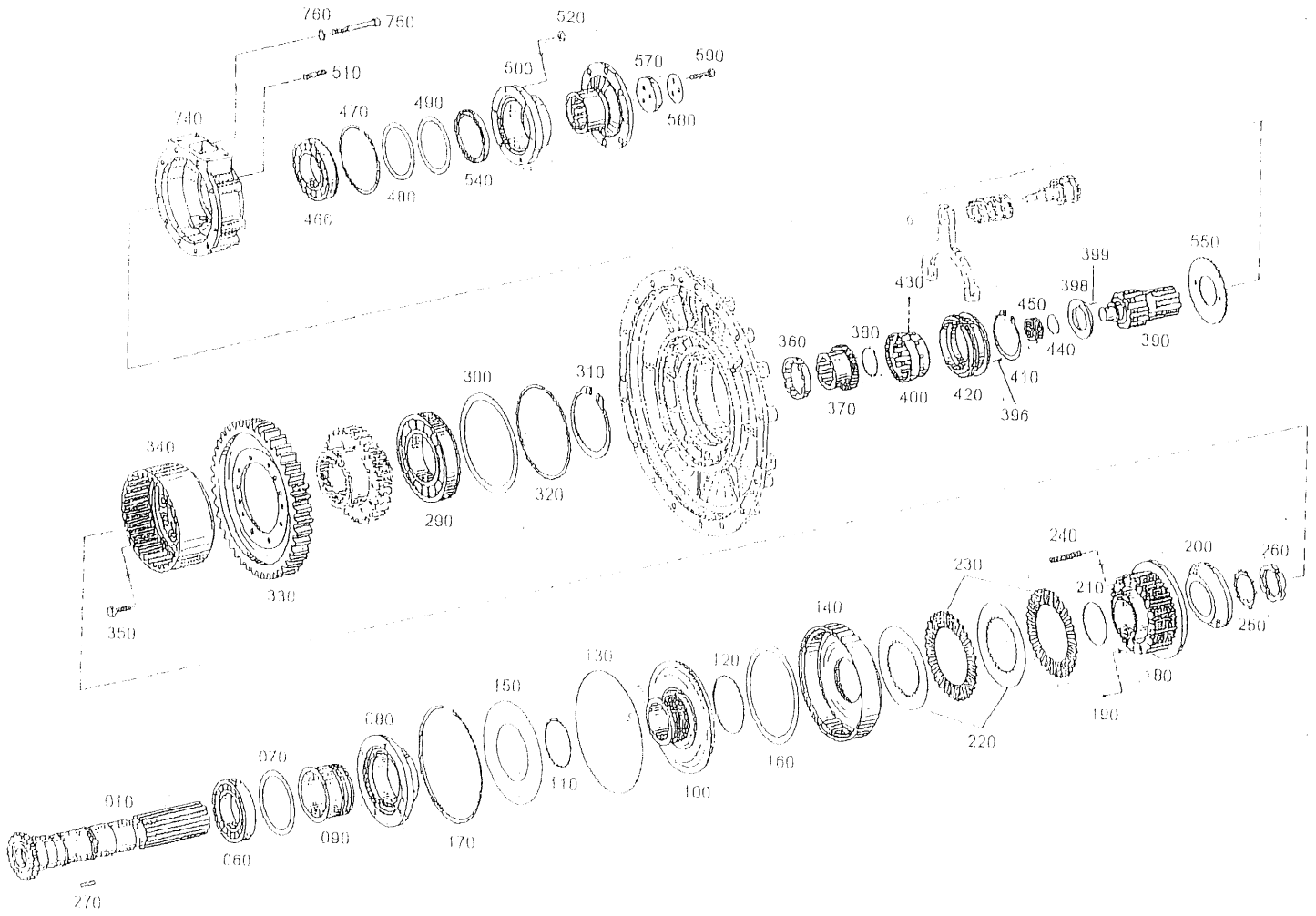
CD 1/2003 11.05.2
shee

* depending on parts list



parts list: 4616 000 260 4 WG-65 II / / PLASSER & THEURER CD 1/2003 EL
figure: 4616 103 006 01 OUTPUT

* depending on parts l



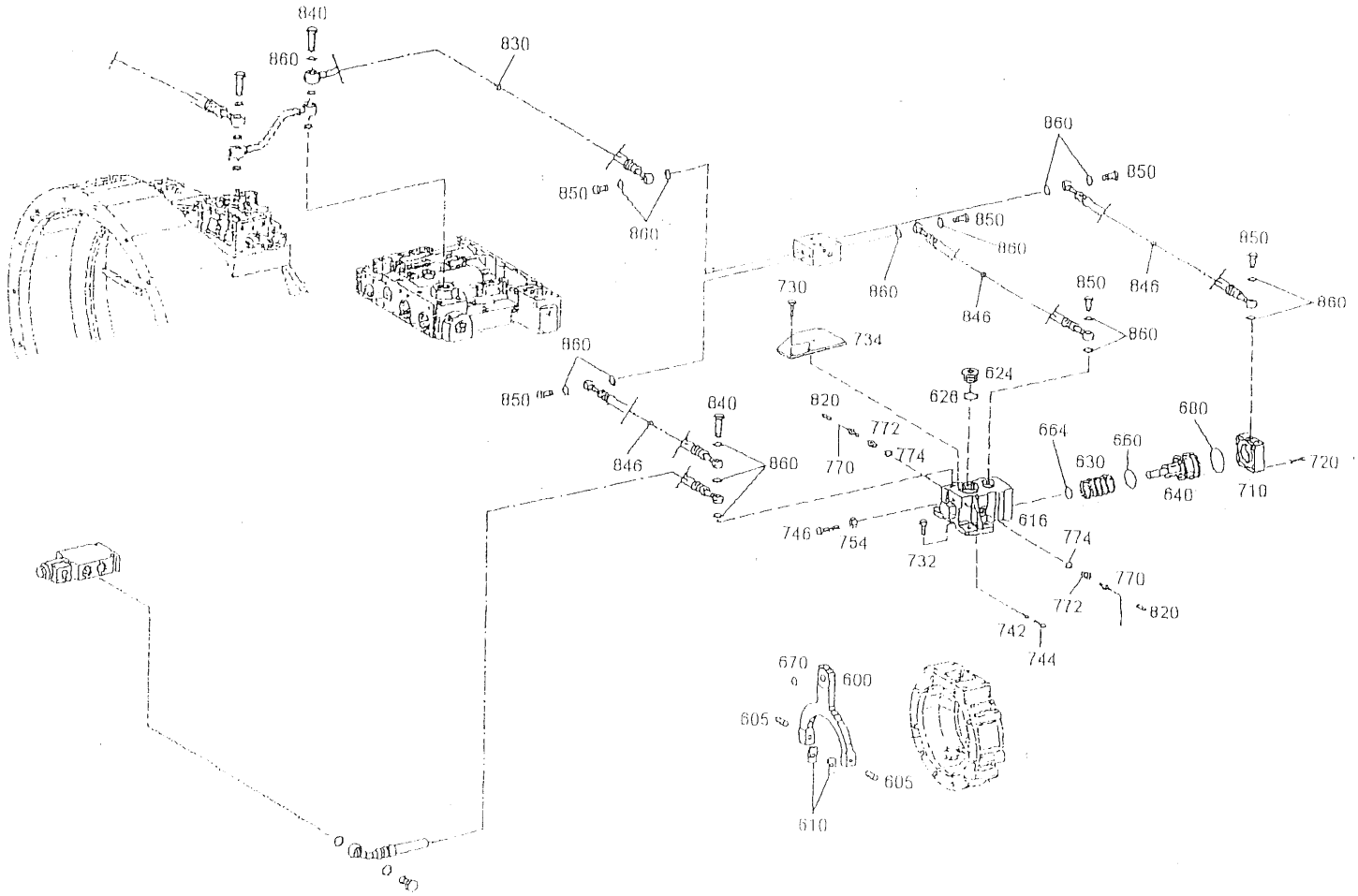
231

parts list: 4616 000 260 4 WG-65 II / / PLASSER & THEURER

figure: 4616 103 006 02 OUTPUT

CD 1/2003 11.05
she

* depending on parts lis



(232)

Spare parts to be kept for emergency repair of ZF Gearbox (Final Drive Engage/Disengage)

Sr No.	Item	Part No.	Description	Qty.
1	396	0631 306 813	Cylindrical Pin	1
2	399	0631 329 012	Slot. Pin	1
3	410	0630 501 055	Retaining Ring	1
4	430	0635 460 023	Ball	10
5	540	0634 319 247	Shaft Seal	1
6	550	4616 303 166	Pulse Disc	1
7	600	4616 203 021	Gear Shift Fork	1
8	605	0631 306 074	Cylindrical Pin	2
9	630	0734 040 691	Spring	1
10	640	4616 303 134	Piston	1
11	660	0634 306 269	O-Ring	1
12	664	0634 313 286	O-Ring	1
13	670	0630 531 009	Retaining Ring	1
14	680	0634 306 162	O-Ring	1
15	220	4616 305 056	Gear Shift Fork	1
16	380	4616 305 069	Piston	1
17	020	4616 305 062	Kupplgs. Bughse	1
18	040	4616 305 065	Sliding sleeve	1
19	230	1203 306 014	Sliding Pad	2
20	364	0634 306 084	O-Ring	1
21	410	0634 306 297	O-Ring	1
22	440	0501 314 265	Switch	2
23	442	0731 590 237	Threaded Bush	2
24	444	0634 306 522	O-Ring	2
25	490	0899 312 312	Hose Sleeve	2

parts list: 4616 000 260 4 WG-65 II / / PLASSER & THEURER
figure: 4616 103 006 01 OUTPUT (4616 103 098)
4616 103 006 02 OUTPUT (4616 103 098)

item	part no.	OCF	description	mod. no.	mod. intr.	technical information	opt.	customer's code no.	weight	suppl.plant
250	0630 754 024	1	TAB WASHER			A 70			0,020	P
260	0637 504 062	1	SLOTTED NUT			M 70X1,5 22H			0,110	P
270	0631 501 430	2	FITTING KEY			B 16X10X 40 16MNCR5			0,050	P
290	0635 330 039	1	BALL BEARING						1,600	P
300		1	WASHER			WTB.ZCHNG. 0730 004 653				
	0730 100 233	1	WASHER			S=0,2 IN 0730 004 653 CK45	WW		0,080	P
	0730 100 584	1	WASHER			S=0,3 IN 0730 004 653 CK45	WW		0,110	P
310	0630 501 060	1	RETAINING RING			120X4			0,130	P
320	0630 503 023	1	SNAP RING			SP 180			0,120	P
330	4616 303 026	1	SPUR GEAR			Z=67 ZF7B			4,800	P
340	4616 303 028	1	BELL HOUSING			C45			4,500	P
350	0636 021 010	12	HEXAGON SCREW			M 12X1,5 X 35 10.9 A			0,040	P
360	4616 303 010	1	SPACER RING			ZF6			0,135	P
370	4616 303 039	1	DRIVER			Z=22 ZF7B			0,815	P
380	0630 501 039	1	RETAINING RING			56X2			0,011	P
390	4616 305 066	1	OUTPUT SHAFT			ZF7B			3,980	P
396	0631 306 813	1	CYLINDRICAL PIN			5 M 6X 20 16MNCR5 E			0,004	P
398		1	WASHER							
	4616 303 160	1	RING			A=8,0 IN 4616 305 068 C45	WW			P
	4616 303 167 H	1	RING			A=8,3 IN 4616 305 068 C45	WW			P
	4616 305 073	1	RING	K01349/98		A=8,6RE.IN 4616 305 068 C45	WW			P
	4616 305 074	1	RING	K01349/98		A=8,8RE.IN 4616 305 068 C45	WW		0,165	P
	4616 305 075	1	RING	K01349/98		A=10,0L.IN 4616 305 068 C45	WW		0,195	P
399	0631 329 012	1	SLOT.PIN			3 X 12 ST			0,003	P
400	4616 305 062	1	KUPPLGS. BUCHSE			ZF7B			1,200	P
410	0630 501 055	1	RETAINING RING			95X3			0,042	P
420	4616 305 065	1	SLIDING SLEEVE			ZF7B			0,925	P
430	0635 460 023	10	BALL						0,010	P
440	0634 402 029	1	PISTON RING			39,5X 2 SH			0,002	P
450	0635 300 117	1	NEEDLE CAGE						0,900	P
460	0750 116 201	1	BALL BEARING						1,017	P
470	0630 503 016	1	SNAP RING			SP 120			0,050	P
480		1	SHIM							
	0730 000 256	1	SHIM			S=1,0 ST VII.23	WW		0,180	P
	0730 000 257	1	SHIM			S=0,9 IN 0730 000 256 ST VII.2	WW		0,010	P
	0730 000 258	1	SHIM			S=0,5 IN 0730 000 256 ST VII.2	WW		0,010	P
	0730 000 259	1	SHIM			S=0,3 IN 0730 000 256 ST VII.2	WW		0,050	P

(234)

ZF-ELCAT parts list

CD 1/2003 11.05.20
sheet

parts list: 4616 000 260 4 WG-65 H / / PLASSER & THEURER
figure: 4616 103 006 01 OUTPUT (4616 103 098)
4616 103 006 02 OUTPUT (4616 103 098)

item	part no.	OCF	description	mod. no.	mod. infr.	technical information	opt.	customer's code no.	weight	suppl.plant
	0730 000 260	1	SHIM			S=0,2 IN 0730 000 256 ST VII.2	WW		0,040	P
	0730 000 584	1	SHIM			S=0,4 IN 0730 000 256 ST VII.2	WW			P
490		1	WASHER			WTB.ZCHNG. 0730 006 163				
	1204 308 061 H	1	SHIM			A=0,3 IN 0730 006 163 F500	WW		0,008	P
	1204 308 014	1	SHIM			A=0,2 IN 0730 006 163 F500	WW		0,005	P
500	4616 305 022	1	COVER			IN 4616 305 042 GG-20			1,990	P
510	0636 610 089	6	STUD			M 10 X 30 8.8			0,020	P
520	0637 006 022	6	HEXAGON NUT						0,010	P
540	0634 319 247	1	SHAFT SEAL			85 X110X13 BS FP			0,065	P
550	4616 303 166	1	PULSE DISC			-------IN 4616 303 165			0,320	P
570	4616 305 006	1	WASHER						0,476	P
580	4616 305 007	1	TAB WASHER						0,026	P
590	0636 016 016	3	HEXAGON SCREW			KPL.			0,470	P
600	4616 203 021	1	GEAR SHIFT FORK			10 M 6X 24 ST			1,000	P
605	0631 306 074	2	CYLINDRICAL PIN						0,016	P
610	1203 306 014	2	SLIDING PAD			GG-25			0,020	P
616	4616 303 123	1	CYLINDER						4,190	P
624	0636 302 009	1	SCREW PLUG			A 33 X 39 CU			0,120	9
626	0634 801 227 H	1	SEALING RING						0,010	P
630	0732 040 691	1	SPRING			ZF7 B ZFN417			0,101	P
640	4616 303 134	1	PISTON			32 FE/ZNPHR8F			1,010	P
650	0630 361 039	2	SEALING CAP			54 X 3 NBR -70-10			0,010	P
660	0634 306 269	1	O-RING			33 X 2 FPM -70-10			0,020	P
664	0634 313 286	1	O-RING			18X1,5			0,001	P
670	0630 531 009	1	RETAINING RING			64 X 3 NBR -70-10			0,002	P
680	0634 306 162	1	O-RING						0,150	P
700	0634 801 045	1	SEALING RING			GG-20			0,010	P
710	4616 303 125	1	COVER			M 8 X 35 8.8			0,740	P
720	0636 010 072	4	HEXAGON SCREW						0,010	P
730	0636 015 120	2	HEXAGON SCREW			M 10 X 30 8.8 AUSG			0,020	P
732	0636 015 127 H	2	HEXAGON SCREW			F270			0,027	P
734	4616 303 146	1	PLATE			GG-20			0,660	P
740	4616 301 279	1	HOUSING			POLYAMID				P
742	4616 303 149	1	PIN			M 6 X 30 8.8				P
744	0636 015 210	1	HEXAGON SCREW			M 10 X 45 8.8 AUSG			0,007	P
746	0636 015 131	1	HEXAGON SCREW			M 10 X 90 8.8			0,030	P
750	0636 101 121	10	CAP SCREW						0,060	P

parts list: 4616 000 260 4 WG-65 II / / PLASSER & THEURER
figure: 4616 105 004 01 OUTPUT (4616 105 058)

item	part no.	OCC	description	mod. no.	mod. intr.	technical information	opt.	customer's code no.	weight	suppl.plant
010	4616 305 066	1	OUTPUT SHAFT			ZF7B			3,980	P
020	4616 305 062	1	KUPPLGS. BUCHSE			ZF7B			1,200	P
030	0630 501 055	1	RETAINING RING			95X3			0,042	P
040	4616 305 065	1	SLIDING SLEEVE			ZF7B			0,925	P
050	0635 460 023	10	BALL						0,010	P
060	0634 402 029	1	PISTON RING			39,5X 2 SH			0,002	P
070	0635 300 117	1	NEEDLE CAGE						0,900	P
075	0730 161 959	1	INTERM.RING			S=65X80,5X10 C60				P
080	0750 116 201	1	BALL BEARING						1,017	P
090	0630 503 016	1	SNAP RING			SP 120			0,050	P
100	0730 000 257	1	SHIM			S=0,9 IN 0730 000 256 ST VIL2			0,010	P
110		1	WASHER			WTB.ZCHNG. 0730 006 163				
	1204 308 061 H	1	SHIM			A=0,3 IN 0730 006 163 F500	WW		0,008	P
	1204 308 014	1	SHIM			A=0,2 IN 0730 006 163 F500	WW		0,005	P
115	4616 305 022	1	COVER			IN 4616 305 042 GG-20			1,990	P
120	0636 610 089	6	STUD			M 10 X 30 8.8			0,020	P
130	0637 006 022	6	HEXAGON NUT						0,010	P
160	0634 319 247	1	SHAFT SEAL			85 X110X13 BS FP			0,065	P
180	4616 303 156	1	OUTPUT FLANGE			IN 4005 303 064 ZF50			3,500	P
190	4616 305 006	1	WASHER						0,476	P
200	4616 305 007	1	TAB WASHER						0,026	P
210	0636 016 017	3	HEXAGON SCREW			M 12 X 45 8.8 AUSG			0,050	P
220	4616 305 056	1	GEAR SHIFT FORK			C45 DIN17200			1,550	P
225	0631 306 074	2	CYLINDRICAL PIN			10 M 6X 24 ST			0,016	P
230	1203 306 014	2	SLIDING PAD						0,020	P
270	0630 361 033	2	SEALING CAP			20 FE/ZNPHR8F			0,004	P
320	0634 801 045	1	SEALING RING						0,010	P
360	4616 305 055	1	CYLINDER			GG-25			6,640	P
364	0634 306 084	1	O-RING			100 X 3 NBR -70 10			0,290	P
370	0732 040 691	1	SPRING						0,101	P
380	4616 305 069 H	1	PISTON			ZF7 D ZFH417			1,450	P
384	0630 531 009	1	RETAINING RING			18X1,5			0,002	P
390	0634 306 269	1	O RING			54 X 3 NBR -70 10			0,020	P
396	0631 306 813	1	CYLINDRICAL PIN			5 M 6X 20 16MNCR5 E			0,004	P
398		1	WASHER			WTB.ZCHNG. 4616 305 068 AB				
	4616 305 070	1	RING			S=9,1 IN 4616 305 068 C45	WW			
	4616 305 071	1	RING			S=9,4 IN 4616 305 068 C45	WW			

ZF-ELCAT parts list

parts list: 4616 000 260 4 WG-65 II / / PLASSER & THEURER
figure: 4616 105 004-01 OUTPUT (4616 105 058)

item	part no.	OCF	description	mod. no.	mod. intr.	technical information	opt.	customer's code no.	weight	suppl.plant
	4616 305 072	1	RING			S=9,7 IN 4616 305 068 C45	WW			P
	4616 305 073	1	RING	K01349/98		A=8,6RE.IN 4616 305 068 C45	WW			P
	4616 305 074	1	RING	K01349/98		A=8,8RE.IN 4616 305 068 C45	WW		0,165	P
	4616 305 075	1	RING	K01349/98		A=10,0L.IN 4616 305 068 C45	WW		0,195	P
400	0631 329 012	1	SLOT PIN			3 X 12 ST			0,003	P
410	0634 306 297	1	O RING			92 X 3 NBR 70 10			0,003	P
420	4616 305 057	1	COVER			GG-20			2,210	P
430	0636 010 112	4	HEXAGON SCREW			M 8 X 90 8.8			0,038	P
440	0501 314 265	2	SWITCH						0,047	P
442	0731 590 237	2	THREADED BUSH			HERGE AUS 0636 304 004			0,016	P
444	0634 306 522	2	O-RING			11 X 2 NBR -70-10			0,002	P
470	0636 302 014 H	1	SCREW PLUG			M18 X 1,5 DIN 908 ST			0,030	P
490	0899 312 312	2	HOSE SLEEVE	K01699/04		M 8X1 3RX1108			0,001	P

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

(237)

No.2014/Track-III/TK/3

New Delhi, dt.14.08.2015.

The Chief Engineers (TMC),
All Indian Railways.

ED/TMM,
RDSO, Manak Nagar,
Lucknow.

Sub: Railway Board's Orders on Track Machines Items.

Ref: Minutes of CE/TMCs Seminar held at IRICEN/Pune on 21st & 22nd August ,2014.

The extract of recommendations for various agenda items of CE/TMCs seminar alongwith Railway Board's order, wherever required is given below for information, record and follow up action. Regarding recommendations for other agenda items, railways may take necessary actions as per decision taken in seminar.

1. **Following important points were reiterated for field level implementation & actions thereon during the seminar held on 21st & 22nd August, 2014:**

1.1 Member Engineering has expressed in various forums that the quality of the Track is not up to the Mark despite deploying best of the Track Machines being used in the world. The Track geometry especially alignment, longitudinal levels and turnouts etc. are not up to mark. It is desired that the way we use the Machines requires change and it should be possible to get much better quality of Track with high durability.

1.2 There should be emphasis on the quality of the work being performed by Track Machines. Another issue specifically mentioned is whether we are doing right calibration at right time. Unfortunately there is lack of clarity on the subject that needs attention.

1.3 Another important issue that had come up during discussions with Member Engineering is regarding design mode of working by Tamping Machines. Whenever Member Engineering had made observation that quality of Track is found wanting, the response has always been that on next time design mode Tamping would be done. Though it may not be true for every Railway and every section, but in general, design-mode working needs to be taken up seriously.

1.4 Another observation of Member Engineering has been that we should analyze results of Track Recording Car runs, before and after Tamping. On his directions RDSO has done quality audit on few Tamping sites and has found several deficiencies in the way we plan use of the Machine and the condition of Machine itself. He requested ED/RDSO to brief this august gathering on the findings of the quality audit for benefit of Railways and to take necessary corrective action.

1.5 Other important observations/directions of Member Engineering and further developments thereon are;

I. Use of IP based camera to monitor works by Track Machines at HQ and Divisions. To directly upload the perform[illegible]

- Machine working parameters into TMS and use of data logger to capture these data.

i. Benchmarking of work performed by Track Machines in terms of the improvement expected/obtained, on which RDSO has to work.

III. Preparation of self-explanatory checklist for use of field officials, who may not remember large number of instructions in various manuals etc. to be watched, in their day-to-day working. The existing checklists for Track Machines maintenance need to be refined by RDSO. Until then, the existing checklists available at RDSO's website should be made use of by Zonal Railways to improve the quality of maintenance.

IV. All IRSE officers should know operations and maintenance of the Machines and conversant with their components, since over a period of time everything will be done by Machines. A revised syllabus for IRSE probationers has been prepared and instructions issued vide Railway Board's letter no. 91/Track-III/TK/2 Vol.IV dtd 04.07.14.

V. Sharing of innovative works through periodical magazine. Earlier IRTMTC used to issue quarterly magazine long ago that has been discontinued, as Principal/IRTMRC did not get the articles for the magazine. A lot of innovative/good work being done by all the Railways are reported through PCDO/letters etc. Some small articles could be prepared along with pictures/sketches and sent to IRTMTC, to publish it for the benefit of all.

VI. There shall be no outsourcing in Operation and Maintenance of Track Machines in field, except for case specific involvement of manufacturer in unavoidable cases. Outsourcing in specific job works during repairs and maintenance of machines as per extant instructions may however continue.

VII. Quality of Camping Coaches needs to be improved. Feedback of staff may be taken for the Camping Coach modified by NR. The instructions have been issued, in the form of correction slip to IRTMM, with concurrence of Mechanical and Electrical directorate of RDSO and Finance directorate of Railway Board. Any suggestions for further improvement may be given to RDSO.

VIII. There is lot of backlog in creation of posts for Operation and Maintenance of Track Machines on some of the Railways. Though the situation has improved and is not as bad as it was 2-3 years ago that resulted in idling of some Machines for want of staff. Considering the lead-time involved in creation, recruitment and training etc., immediate action is necessary to avoid shortage of staff in future.

2.0 Item No. 1.3 - Criteria for running of RGM and allocating RGM to work on CR routes:

2.1. **Issue**

Presently RDSO is deciding the sections where RGM is to run with the limitation of only two Machines. It will be beneficial if the criteria are made available. Central Railway also has sections with heavy traffic in BSL and NGP Divisions having high Rail and weld failures and therefore it is felt that rail grinding would be a solution to prolong the life of the rail. It is requested to consider giving RGM for these sections of CR.

2.1.2 **Recommendations by IRICEN:** Zonal Railways to provide wayside lubricators in time bound manner. The procurement of rail lubricators should be with Track Machine organization on Zonal Railways.

2.1.3 **Railway Board's Order:** Instructions on Rail Lubrication already exist vide Board's [illegible] 2008/CE-II/TK/3 dt 07.06.2013. No further instructions required. Item may be

2.2 Item No. 2.1 - Fund Allotment under separate Head for Track Machine Maintenance:

2.2.1 **Issue**
In Demand No. 4 & 7, there is no separate Head for Track Machine maintenance. Considering the fact that Track Machines are working since long and the Indian Railway is on verge of complete mechanization of Track maintenance. The Track Machine units have still not been allocated separate fund head; as such joint fund allocation ultimately curtails the scope of fund availability for utilization of Track Machine organization.

2.2.2 **Recommendations by IRICEN**: Railway Board may issue policy for separate Budgeting Unit for Dy. CE/TM.

2.2.3 **Railway Board's Order:** Railways such as CR, WR, SCR, NCR, NR, SECR etc. to advise their instructions, policies and practices regarding fund allotment for track machines to Railway Board. After study of their policies, Railway Board may then issue a uniform policy for implementation by all.

2.3. Item No. 3.7 - Procurement of spares by Railway:

2.3.1 **Issue**
The procurement of spares is arranged either by placing indents and procuring items individually following stores procurement procedure. Some Railways are procuring this by calling a Rate Contract for major Supplier like M/s Plasser etc. and taking the items as and when required. This system has the advantages in the form of low inventory, doing away with multiple procurement Tenders, over procurement is avoided for the fear of material going out of stock. This item is included to know the practice being adopted by other Railways and to improve upon the procurement process.

2.3.2 **Recommendations by IRICEN:** It is recommended to go for Rate Contract instead of indenting and tendering individually. A committee of ED/RDSO, CE/TMC/NCR, CE/TMC/SCR and CE/TMC/WR may be formed by Railway Board to study the matter in totality and suggest standardization of procedures.

2.3.3 **Railway Board's Order:** A committee of CE/TM/WR, NCR & SCR may be nominated with CE/TM/NCR as the coordinator. Railways also to study Stores guidelines in this regard and the practices being followed in Mechanical and Electrical departments. Having done a proper study Railways may suggest systems with specific details to the committee for framing a uniform policy in this regard.

2.4 Item No. 4.14.2 & 4.3 - Sanction of assured blocks, Continuous reduction in maintenance window due to increasing number of trains and Reduction of speed on Track if scheduled maintenance is delayed/not done:

2.4.1 **Issue**
SR brought out that though corridor blocks are indicated in the Working Time Table for various sections, many a time these blocks are not made available for Machine working since goods trains are run during these periods. It should be taken up at Board's level with the Operating Branch and instruction should be got issued to Zonal Railways that this time period can be utilized by Operating branch only with the prior

C●mentioned that it is well known that maintenance window is getting reduced due to introduction of new train, without adequate thought going into the aspect of maintenance. Something will have to be done to ensure that proper maintenance inputs go into the Track. Either the Track directorate or Track Machine directorate will have to be involved in the stage of timetabling. Another thing is to get additional Machine for those sections so that clubbing of Machines is done. Option of putting high output tampers in those sections and accepting the facts of lower blocks right at the time of stage of planning for Track maintenance will have to be considered. The energy of Divisional officers is wasted in fighting for the blocks as operating also finds it difficult to give the blocks in spite of good intentions. This item is important and meaningful discussion keeping ground realities in mind is essential.

There are sections where important Track maintenance items like Tamping, deep screening etc. of turnout/ main line Track becomes overdue due to shortage of blocks. There is no pressure on operating for giving the blocks. Thinking of putting some speed restriction in case the maintenance operation becomes overdue can be a logical step in that direction. CTE/CR has already sent his recommendations to Railway Board on these lines. This forum also can do brainstorming on this issue.

2.4.2 **Recommendations by IRICEN:** The stipulations of IRPWM for Machine working (para 226) are to be pursued. The identified corridor blocks are to be considered sacrosanct whenever, there is a requirement of maintenance of track and other fixed infrastructure.

2.4.3 **Railway Board's Order**: Similar item is under discussion in Track Standard Committee deliberations, hence there is no need to discuss this item at this fora.

2.5 **Item No. 4.6 – Speed Restriction on adjoining line:**

2.5.1 **Issue**

As per clause 4.6.8(III), corrections slip No. III of IRTMM all trains passing on the adjoining Track should be issued with a caution order "observe hand signal, whistle freely and stop if required". In the absence of clear cut instruction on imposing suitable speed restriction on the adjoining lines, Operating department seldom agrees to the request of Engineering branch for imposing SR. Hence the Para to be suitably modified as under.

"All trains passing on the adjoining Track should be issued with a speed restriction of 30 kmph and caution order to observe hand signal, whistle freely and stop if required".

2.5.2 **Recommendations by IRICEN:** It was recommended that in case of BCM, TRT and PQRS trains passing on the adjoining Track should be issued with a speed restriction of 50 kmph and caution order to observe hand signal, whistle freely and stop if required for the duration of Block.

2.5.3 **Railway Board's Order:** Imposition of speed restrictions on adjacent line is not a technical requirement for Machine working, however it may be safety requirement for the workers and depending upon local site conditions and time availability of ERs in the section P Way officials may take appropriate decision and Existing instructions are good enough.

2.6 **Item No. 4.8 (iv) – Enhancing progress of LC deep screening using BCM:**

At present whenever LCs are deep screened using BCM, Open line is accounting for the exact Track length of LC while giving progress. However it is noted that for deep screening LC, almost one hour is taken due to the hard core of ballast and hence the given progress does not commensurate with effort put up by the Machine/Machine staff. The normal output of BCM Machine for effective hour of working varies between 200 to 250 m and hence for each LC screened, the progress should be 200 m. Board may issue suitable guidelines in this regard. (24.1)

2.6.2 **Recommendations by IRICEN:** SR, WR and NR to analyze the issue and make suitable recommendation.

2.6.3 **Railway Board's Order:** Progress of deep screening on a level crossing is less, similarly less progress is achieved on locations with obstructions. Less progress of BCM can always be explained with valid reasons Hence no separate instructions are required. Item may be closed.

2.7 **Item No. 5.10 – Facilities for overhauling of undercarriage of Camp Coaches in Track Machine Zonal Shed:**

2.7.1 **Issue:**

At present the Camping Coaches are being modified from C&W Workshops of different Railways. Also, IOH / POH / maintenance of these coaches are being not carried out on the schedule time leading damage of undercarriage and finally the condemnation of Camp Coaches takes place.

As such the Zonal Railway should be equipped to carry out the modernization / overhauling work of the camp coaches. Hence, necessary guidelines may be issued in this regard.

2.7.2 **Railway Board's Order:** Undercarriage of Camp Coaches need to be inspected and attended by Mechanical Staff and their IOH/POH also required to be done by Mechanical Staff. Track Machine workshops and staff are not equipped to take this additional workload at present. Hence no new orders are required and the existing instructions need to be adhered with.

2.8 **Item No. 6.1 – Review of Yardstick:**

2.8.1 **Issue**

There is need for Review of Yardstick for Non-Gazetted posts in Zonal Track Machine Depot as per IRTMM-2000 correction slip no 9, item no. "D", for Zonal Track Machine Depot has been fixed for more than 40 units due to increase in fleet of Machines, over aging of Machines, conversion of Camping Coaches and also POH of some Machines i.e. UTV, BRM, PQRS & T-28 Machine.

ECR mentioned that Revision of yard stick for Scale of Staff for repair and maintenance of Zonal Depot (circulated vide correction slip no. 9 of IRTMM'2000) For non Gazetted post the Scale of Staff has been based on Machine holding units i.e. for > 40 Machine units, > 21 to 40 Machine Units &upto 20 Machine units. In this Scale the yardstick has fixed for > 40 Machine units but no limitation has been shown than up to what Machine unit this scale of staff will be effective. It is quite difficult to maintain the Machine with variation of 20 Machine units with similar strength of staff. Hence, it should be realistic and at least scale of staff should depends up on the proportional

maintenance activities. Also, no provision for Scale of Clerical staff has been kept to look after and to maintain the Service record / promotions and to look after the pay & pension/pass etc. , hence, the scale of these clerical staff may also required to be included in the structure of staff Scale required for the Zonal workshop.

242

2.8.2 **Recommendations by IRICEN:** Action already in process at Railway Board to be expedited.

2.8.3 **Railway Board's Order:** A correction slip in this regard is under consideration of Railway Board.

2.9 **Item No. 6.2 (iii) – Creation of post of Driver-cum-Technician:**

2.9.1 **Issue**

The Track Machines Operators (SSE/JE/TMC) are responsible for driving, shunting, supervision, maintenance & repair of Machine, record/store maintenance & store chasing, progress report, staff control on Machine, liaison with Division for blocks, route learning etc. in which they are very busy and have no social interaction. As detailed above, Machine operator have to perform in multitask and always remains overloaded. To off load the Machine operator and to make focus for better output in terms of quality and quantity and to relieve him from burden of shifting/shunting of Machine, a post of driver-cum-technician in GP Rs.1900/-may be created in Track Machine Organisation similar to ALP in GP Rs.1900/- In this selection process those Group 'D' shall be considered who have passed Xth and ITI as in the case of ALP. They can be given responsibility of driving & shunting of Machine after mandatory training as given to ALPs. For better future prospect, their seniority will be maintained with other Technician of TMC Organisation and finally they can also be promoted as JE/SSEs on their turn.

2.9.2 **Railway Board's Order:** All Railways may examine all the related and relevant issues and come up with their suggestions to NR/Railway Board. This is an issue in which personnel department of the zones and Railway board is involved, based on the suggestions (in consultation with their Personnel branches) of zonal railways this issue may be considered in future. But there are many complex issues involved in this proposal. The issue at Board level can be initiated only after a sizeable number of Railways firm up a proposal in this regard involving their personnel branches. No Board, orders required at present.

2.10 **Item No. 6.6 – Avenue for promotion of cook mates – Pending decision of Railway Board:**

2.10.1 **Issue**

Request for forming of AVC for Cook/Cook-mates in the line of Assistant Cook/Cook/master cook for the staff working in TMO has been sent to Director Track (MC) vide letter No. Engg/TM/Staff/27, dated 26.08.2011. Followed by 25 reminders. Early decision is required from Railway Board.

2.10.2 **Recommendations by IRICEN:** Railway Board may expedite the decision.

2.10.3 **Railway Board's Order:** Track Machine Dte to follow up with Establishment Dte, However Zonal railways may at the same time persue outsourcing of this activity as already done successfully by SECR.

2.11.1 **Issue**

Railway Board is requested to issue guidelines regarding training period, syllabus, for safe working rules for Track Machines. At present there are no guidelines and syllabus regarding Safe Working Rule Training. (243)

2.11.2 **Recommendations by IRICEN:** WR to send the suggested modifications to RDSO for consideration.

2.11.3 **Railway Board's Order:** WR to send the suggested modifications to RDSO for consideration.

2.12 **Item No. 7.2– Simulator training along with initial training at IRTMTC:**

2.12.1 **Issue**

As on date newly recruited JE/SE have no specific hands on training of Machines, although practical training is stipulated. Simulator training should be enforced at IRTMTC/ALD.

2.12.2 **Recommendations by IRICEN:** It is recommended that Track Machine Training Simulators be procured by IRTMTC.

2.12.3 **Railway Board's Order:** Track Machine Training Simulators may be procured by IRTMTC.

2.13 **Item No. 7.4 and 7.5 – Hands on Training and Training by OEM:**

2.13.1 **Issue**

The Electrical & Electronic circuits provided in Track Machines are failing due to which Machines are stalled in mid section resulting into disruption of traffic. Similar is the case on Pneumatic and hydraulic system. Hence extensive hand on training on these aspects is to be imparted at IRTMTC/Allahabad. Further there should be a system of collecting, analyzing and documenting all such major failures from Zonal Railways by the IRTMTC and publication of periodical case studies should be done for the benefit of trouble shooting such defects in future.

Periodical training should be imparted by OEM agency (viz. Plasser &Theurer, Phooltas, Cummins, MWM, Deutz, etc.) regarding technical developments and maintenance aspects. This will facilitate staff to remain with updated knowledge.

2.13.2 **Recommendations by IRICEN:** The training module to be reviewed/developed and Training monitored by IRTMTC/ALD. SR may send its specific suggestion on existing training syllabus to IRTMTC.

2.13.3 **Railway Board's Order:** SR may share/send suggestions to Principal IRTMTC/ ALD/ NCR.

2.14 **Item No. 7.8 – Provision of road vehicle for AXENs, STMD & ZTMD, and officers of Track Machine organization:**

2.14.1 **Issue**

SR mentioned that AXENs (TMC) of Division to be provided with one road vehicle for inspecting the Machines and attending failures, transporting the materials & staff to th

WCR desired that vehicle with driver to be provided in IRTMM for each STMD & TTMD.

NFR mentioned that Track Machine organization at HQ &Division level should be treated as Field Unit with all connected staff as safety category. Moreover, they are also responsible for getting the Tamping of newly constructed lines (NL/Doubling /GC). Inspection, Emergency repairs & routine surprise checks are only possible, once regular hired vehicle are made available, treating it as project organization.

2.14.2 **Recommendations by IRICEN:** It was mentioned that there are certain guidelines/circular issued from Railway Board regarding hiring of road vehicles. The issue was discussed in detail and it was recommended that Zonal Railway would make Reference to Railway Board for review and issue of suitable guidelines/directives.

2.14.3 **Railway Board's Order:** Proposal for provision of vehicles for ADENs of track machines is under consideration at Railway Board.

2.15 **Item No. 7.16 – Normal Tamping tools v/s Tungsten Carbide tip Tamping tools:**

2.15.1 **Issue**

CR mentioned that Purchase orders for the Tungsten Carbide tip Tamping tools has been issued by Railway Board. These Tamping tools carry a guarantee for service of about 300 Kms (for CSM) and 450 km (for 3X) of Tamping (2,50,000 insertions). However there orders are on other Railways. In the past orders were placed on M/s Kenmetal India Limited, Mumbai and the tools were installed on Duomatic and Tamping Express on CR which was a failure. Detailed report is available with CR.

If we work out the life cycle cost for both the kinds of Tamping tools, it is seen that the carbide tip Tamping tools can be comparable to ordinary Tamping tools if they can give a life of 900 Km or their cost comes down to Rs. 6400/-. Though Carbide tip Tamping tools have two advantages over ordinary Tamping tools (i) Saving in changing time & (ii) Lower possibility of carrying out Tamping with worn out Tamping tool, but we will have to weigh pros and cons before adopting carbide tip Tamping tools on large scale. Experience of other Railways may give a better picture.

2.15.2 **Recommendations by IRICEN:** RDSO to study the issue and come up with suitable recommendations.

2.15.3 **Railway Board's Order:** RDSO to study the issue and come up with suitable recommendations.

2.16 **Item No. 8.1 – Changes in IRTMM**

2.16.1 **Issue**

Revision in IRTMM Para 3.3.2(v)

Existing Para 3.3.2(v) of IRTMM states:

" It should be ensured that there is no obstruction in the width of 4100mm to avoid infringement to cutter chain. Rail pegs of L.W.R. creep posts etc. should be removed. Pucca drain walls, if infringing, should be dismantled alternatively the Track can be slewed temporarily."

The above provision of width of unobstructed working of BCM was based on older design of 1900mm wide cutter bar. With the new cutter bar having width of 2150mm, the provision needs to be revised and taking into consideration proposed ballast

The above provision of IRTMM accordingly needs revision.

245

Addition in IRTMM-2000:
The general data on salient features of newly introduced Track Machines i.e. MPT, UNIMAT 4S may be provided in Chapter 2 of IRTMM-2000.

2.16.2 **Recommendations by IRICEN:** RDSO to examine and propose correction slip to IRTMM.

2.16.3 **Railway Board's Order:** RDSO to examine the para 3.3.2(v) of IRTMM in context of new designed cutter bar on BCMs and propose correction slip accordingly for Railway Board's approval. Item no 7.7(i) of previous seminar RDSO may also propose correction slip to Chapter 2 of IRTMM for new type of Track Machines (e.g. MPT, UNIMAT-4S, RGM-72 Stone etc.) added/being added in the system. RDSO has already been assigned the task of redrafting IRTMM which may be expedited for completion of a new draft IRTMM.

General - On remaining items on which no specific orders of Board is proposed, concerned zonal Railways/RDSO may take appropriate action keeping in view discussions held in seminar.

(T K Pandey)
Director, Track Machines
Railway Board

14/08/15

Copy to: 1. Director/IRICEN/Pune for information.
2. EDCE(P)/Railway Board for information.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

246

No. 2015/Track-III/TK/2 New Delhi, dt.18.09.2015

Principal Chief Engineer,
All Indian Railways.

Sub: Safe working of Track Machines.

Ref: i) Chapter 4 of IRTMM-2000 & Correction Slips of IRTMM.

ii) G&SR of concerned Railway.

Safety of Track Machines, worksites and staff working on these machines shall be ensured at all time, railways are advised to follow the rules for track machines working mentioned in IRTMM and G& SR read with relevant correction slips of the concerned railways. The worksite in the block section during the machine working should be protected as per provisions of para 806 of IRPWM and G&SR of concerned railway.

18/09
T.K.Pandey
Director Track(MC)
Railway Board

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

(247)

No. 2015/Track-III/TK/2 New Delhi, dt. 26.10.2015

Principal Chief Engineer,
All Indian Railways.

Sub: Safety at work Sites- Integrated blocks/Group working of Track Machines.
Ref: This office letter of even no. dated 18.09.15.

In one of the integrated traffic blocks involving two track machines and one tower wagon in the same block section, one track machine collided with the tower wagon while clearing block, resulting into injuries to staff, damages to machines and a serious case of bursting of traffic block. Though the case is yet under investigation for exact cause of the accident, apparently it seems that extant provisions of IRTMM and G&SR were violated.

In this regard all concerned may please be counselled to ensure safe working by following extant instructions of group working/machine working.

At the same time as advised earlier vide above referred letter, Railways may ensure adherence to IRTMM and G&SR provisions for safe working of track machines.

26/10/15
T.K.Pandey
Director Track(MC)
Railway Board

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No.2008/Track-III/TK/8 Vol. IV

New Delhi, dt.24.09. 2015. (240)

Executive Director/TM
RDSO, Manak Nagar
Lucknow

Sub: Approval of list of manufacturers and suppliers for Small Track Machines and P.Way Measuring Tools.

Ref: i) RDSO letter No. TM/SM/Track Dated 12.05.15.
ii) RDSO letter No. TM/SM/Track Dated 23.07.2015.
iii) RDSO letter No. TM/SM/Track Dated 11.08.2015.

Board has approved the recommendation of the Committee as contained in the minutes of the meeting of Standing Committee on Small Track Machines held at IRICEN/PUNE on 08.05.2015, with observations as below:

1.0 Extension of Validity of Approval (Committee's minutes vide Para 2.0): The validity of existing approved list is up to 31.12.2017. Extension of validity of two more firms has been approved upto 31.12.2017. The details of the Firms are as under:

SN	Name of the Manufacture/Suppliers	Item(s)
1	M/s Kailash Special Steel Pvt. Ltd Delhi	i) Toe Load measuring device (Mechanical)
2	M/s Saranya Electronics Pvt. Ltd. Hyderabad	i) Continuous Rail Thermometer (Part-II) ii) Gang work site remote Control hooter

1.1 As per advice of RDSO conveyed by letter under reference (iii) above, the approval of "M/s Saranya Electronics Pvt. Ltd. Hyderabad" is kept on hold till submission of next report of the committee.

2.0 Upgradation of vendors from Part-II to Part-I (Committee's minutes vide Para 3.0): Following three vendors from Part-II to Part-I for their respective Small Track Machines has been approved for upgradation. The details of the vendors are as under:

SN	Name of Firm	Name of Machine
1	M/s Lakshmi Industrial Corporation, Meerut	Portable DC Weld Generator
2	M/s. Rajasthan Mining & Engg. Pvt. Ltd. Jaipur	Light Weight Rail (Mono) cum Road Trolley
3	M/s Universal Controls. Hyderabad	Gang Worksite Remote Control Hooter

3.0 Multi Sourcing of Vendors (Committee's minutes vide Para 5.0):

(249)

M/s Lakshmi Industrial Corporation, Meerut has been approved for the following machines in Part-II with validity up to 31.12.2017.

The details are shown as under:

S N	Name of Machine	Name of Manufacturer/supplier
1	Heavy Duty Hydraulic Extractor for Jammed ERCs (10 ton):	M/s Lakshmi Industrial Corporation, Meerut.
2	Hydraulic Rail Tensor (Non-infringing type) 70t capacity:	M/s Lakshmi Industrial Corporation, Meerut.
3	Hydraulic Track Lifting cum Slewing Device (TRALIS) 15 ton Capacity:	M/s Lakshmi Industrial Corporation, Meerut.

4.0 Development of New Machines(Committee's minutes vide Para 6.0) :

4.1 Development of Light Weight Push Trolley :

M/s Lakshmi Industrial Corporation, Meerut has been approved for the development of light weight push trolley for trial orders to all zonal Railways with validity up to 31.12.2017. Besides this M/s Kelvin Enterprises (India), New Delhi has already been approved for the same.

4.2 Development of Light Weight Rail Drilling Machine:

M/s Lakshmi Industrial Corporation, Meerut has been given approval under trial order to be placed by all zonal Railways for the development of Light Weight Rail Drilling Machine with validity up to 31.12.2017.

5.0 Status of Machines under Trial Order (Committee's minutes vide Para 7.0, Details are summarized in Annexure 'C' of the minutes of the committee):

As per the Annexure C of Committee's recommendations there are following 05 Machines under Trial Orders.

i) Hand operated weld trimmer.
ii) Abrasive Rail Cutter, Rail Drilling Machine, concrete sleeper breaker and concrete sleeper core drilling operated by Hydraulic Common Power Pack.
iii) Track Horse MHP3 (self propelled mobile Hydraulic Power Pack) (Now Read as Self Propelled Hydraulic Common Power Pack Cum Transporting Cart).
iv) Impact Wrench (IW16).
v) Light Weight Push Trolley.

In this regard RDSO is advised to chase expeditiously to zonal Railways about the performance of the above machines which are under trial. There are two machines i.e. Hand operated weld trimmer & Abrasive Rail Cutter, Rail Drilling Machine, concrete sleeper breaker and concrete sleeper core drilling operated by Hydraulic Common Power Pack" are under trial for more than five years. Hand operated weld trimmer has already been upgraded to regular supply for respective vendor.

The deletion of latter machine requires more convincing reasons rather than simply that Railways are not taking interest. RDSO should chase this item further. (250)

6.0 Modifications in existing Machines proposed by Vendors (Committee's minutes vide Para 8.0):

RDSO should upgrade and strengthen its performance based and functional specifications and should consider specifying objective test and inspection parameters for quality procurement of Small Track machines instead of deliberating about Make of Engine, or make of other different parts of machines.

7.0 Discontinuing Unused/Less used Small Track Machines:

Para iv) of Railway Board letter no.2008/Track-III/TK/8 Vol.II dated 18.05.2011 is re-produced below:-

There are a large number of categories of machines many of which substitute each other Small Track Machine Committee should identify such alternatives among the approved list.

In response to the above, many machines have been replaced by alternative ones. At present following machine have their other/ modified versions:

S N	Existing Machine (old version)	Other/ Modified Version	Remarks
1.	Micro-controller Based Oscillation Monitoring System	P.C. Based Oscillation Monitoring System (PC-OMS)	Only vendor for 'Micro-Controller Based Oscillation Monitoring System' refused to have validity extension in previous meeting. At present there is no vendor for this item.

In view of the above Micro- controller Based Oscillation Monitoring System has been approved to delete from approved list.

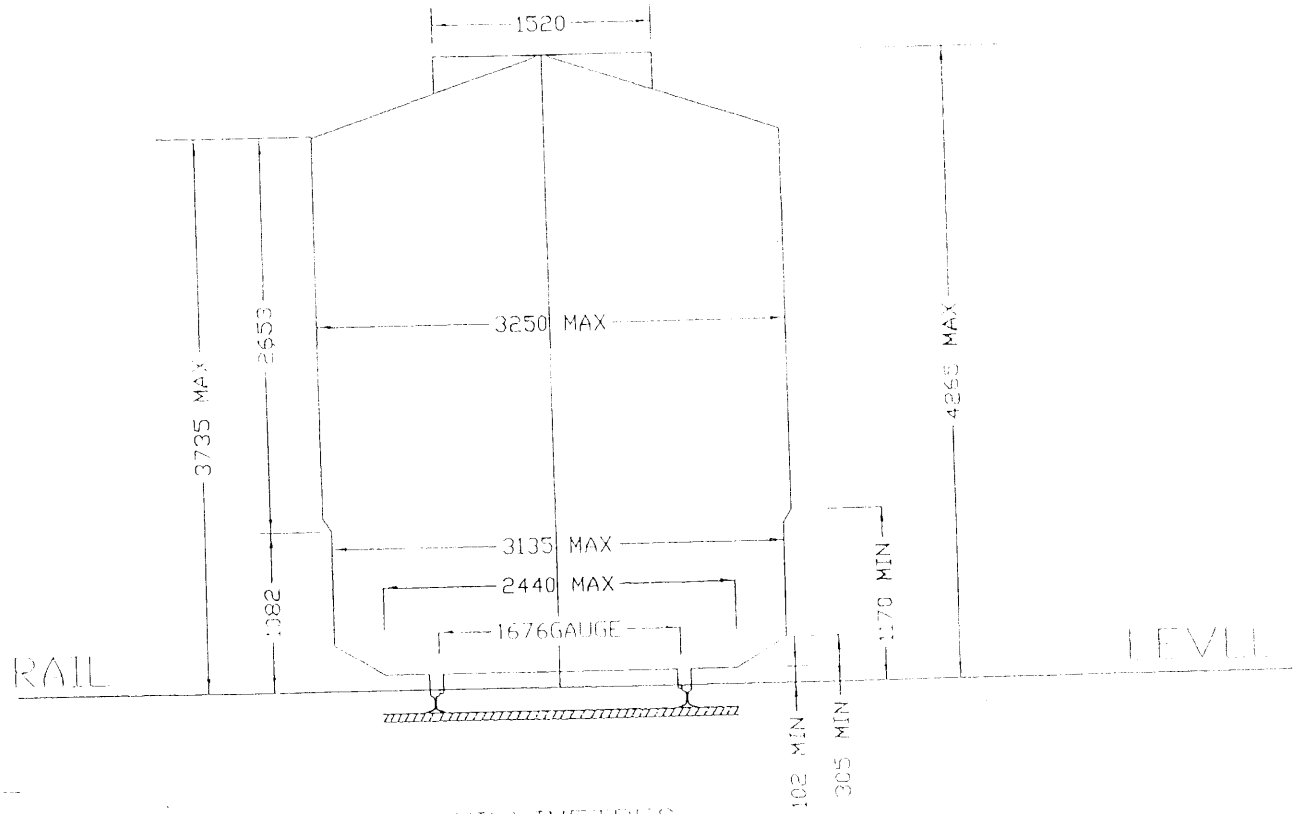
8.0 Regarding other issues contained in Para Nos. 4.0, 6.2, 6.3, of STMC's minutes, the same do not require approval of Railway Board. EDTM/RDSO is advised to take suitable necessary action after due examination on such items.

24/09

(T K Pandey)
Director Track (MC)
Railway Board.

DIAGRAM No. 1D (EDOT 2202)
1676mm GAUGE

MAXIMUM MOVING DIMENSIONS



NOTE:-
ALL DIMENSIONS ARE IN MILLIMETRES
EXCEPT WHERE OTHERWISE SHOWN.

Annexure-I

Machine details required for simulation of machine on NUCARS or similar Track-vehicle simulation software

SL. No	Component's Name	Parameters required						
		C.G. of component in x, y, z direction from rail level in mm (Referenced point 1st axle)			Mass in Kg and Mass moment of inertias in Kg- m^2 of component in three dimension space about their C.G			
		X	Y	Z	Mass	Ixx	Iyy	Izz
1.	Super structure with vehicle frame (machine structure kept on secondary suspension of front and rear bogie)							
2.	Front Bogie frame including brake rigging							
3.	Rear Bogie frame including brake rigging							
4.	Transmission system device (hydraulic. Mechanical or electrical traction motors)							
5.	Wheel axle set including axle boxes which constitute the unsprung mass							
6.	Mass of Items included in unsprung mass partially or fully along with their							Total unsprung mass

(25)

	name per axle	1	2	3	4	5	6	in tonnes
7.	Total weight of components in tonnes	Front bogie full assembly		Rear bogie full assembly		Machine frame full structure	Full weight of vehicle (front bogie + rear bogie +vehicle car body or super structure)	
8.	Suspension stiffness details in Kg/mm	Primary suspension element stiffness per axle box between bogie and axle box				Secondary suspension element stiffness per side between bogie and machine frame		
		Vertical stiff		Lateral stiff	Longitudinal s	Vertical stiff	Lateral stiff	Longitudinal stiff
9.	Damping force details (If hydraulic damper used give there rating force per meter/second)							
10.	Clearance in mm or radian provided for motion between bogie frame and machine frame for relative motion (motion stopper)	Vertical direction		Lateral direction	Longitudinal direction	Rotation abou vertical axis	Rotation about lateral axis	Rotation about longitudinal axis

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No.2014/Track-III/TK/5 New Delhi, dt. 2.11. 2015.

Chief Engineer (Track Machines)
All Indian Railways.

Sub: Meeting of Chief Engineers Track Machines.

Please find enclosed herewith the minutes of the meeting held at Railway Board on 06.10.2015 for information and necessary action.

(T K Pandey)
Director Track/MC
Railway Board

(255)

Minutes of the Meeting of Chief Engineers/Track Machine held at Railway Board, Rail Bhavan on 6th October, 2015

A meeting of Chief Engineers/Track Machine/IR was held on 6th October, 2015 at Railway Board. The following officers attended the meeting:

Railway Board

1. Shri S.S. Narayanan, Additional Member/Civil Engineering
2. A. K. Khandelwal, Executive Director/Track (Machine)
3. Shri T. K. Pandey, Director/Track (Machine)

Zonal Railways

4. Shri Naresh Lalwani, CE/TM, C.Rly.
5. Shri R. Bhargava, CE/TM, E.Rly.
6. Shri Vijay Kumar Sahu, CE/TM, EC.Rly
7. Shri Hansraj Sharma, CE/TM, ECo.Rly
8. Shri Sanjeev Kumar Lohia, CE/TMC, N.Rly.
9. Shri C. P. Gupta, CE/TMC, NC.Rly.
10. Shri S. C. Srivastava, CE/TMC, NE.Rly.
11. Shri V. K. Madhukar, CE/TP, NF.Rly.
12. Shri P.K. Goyal, CTE/TMC, NW.Rly.
13. Shri A. Gautam Srinivas, CE/TM, SC.Rly.
14. Shri K.C. Sainsi, CTE, SEC.Rly.
15. Shri Vipin Kumar, CE/TM, SE Rly.
16. Shri Anil Kumar Malik, CE/TP, SW.Rly.
17. Shri Vivek Kumar Gupta, CE/TM, W.Rly.
18. Shri R.K. Meena, CTE, WC.Rly.
19. Shri N. Balasubramanian, Dy.CE/TM/HQ, S.Rly.
20. Shri Dinesh Tripathi, Dy.CE/TM/JHS, NC.Rly.

1.0 Shri A.K. Khandelwal, Executive Director/Track Machines, Railway Board welcomed AM/CE and all the participants The key points mentioned by Shri Khandelwal are:

1.1 Member Engineering has expressed his concern over the poor performance of machines.

1.2 Quality of machine output should be monitored. All machine parameters should be calibrated with standard gauges and quality output should be ensured.

1.3 Railways are demanding additional machines without utilizing the capacity of available machines. Utilisation of available machines needs to be improved to make up requirement of additional machines.

1.4 The block utilization sould be optimized by grouping of machines and other Engineering, S&T, OHE,Bridge works etc.Integrated maintenance blocks needs to be planned for optimum utilization by all departments.

1.5 The Track Machine progress and connected details are not being entered in TMS regularly by all Zonal Railways. It should be entered in TMS regularly.

1.6 There is lot of backlog in creation of posts and filling of vacancies for Operation and Maintenance of Track Machines on most of the Railways. Though the situation has improved and is not as bad as it was 2-3 years ago that resulted in idling of some Machines for want of staff, however considering the lead-time involved in creation, recruitment and training etc., immediate action is necessary to avoid shortage of staff in future. The Railway wise status was discussed in details.

1.7 The utilization of machines and block availability has reduced compared to last year. Railways should make additional efforts to achieve laid down targets.

1.8 Discipline should be maintained in respect of POH of the machine. Please see that the machines shall be released in time as per programme to ensure good health of machine.

1.9 Machines after POH shall be jointly inspected by OEM, CPOH and user Railway to ensure quality work.

1.10 Safety of machines and men working during traffic blocks should be ensured by protection.

1.11 IP based cameras should be installed on tamping machines to start with.

2.0 Address by Additional Member/Civil Engineering

2.1 The productivity of machines should be improved by effective monitoring, demanding new additional machines is not the solution.

2.2 Proper feeding of track machines data should be done in time in Track Management System. Non-filling up of data or late submission of data will not serve the purpose. TMS data should be updated regularly.

2.3 All the machines should be installed with proper IP based camera as advised in the past. The cost of these cameras is very nominal and the installation should be completed early for all tamping machines. No further guidelines or specification will be issued on the subject.

2.4 ME has been repeatedly emphasizing on the protection of machines during bock working It should be ensured.

2.5 When many machines are working in Group in a block section, you have to take precautions. Please see that machines should be properly manned, control of speed,

257

2.6 Machines should be deployed in construction projects after ascertaining the readiness of track for tamping. Instructions already exist for joint inspection by Construction & Open Life Officers before machine deployment. Maximum utilization of these machines shall be ensured in Construction Organizations. Present utilization and output of machines needs improvement. We must support Construction Organization for opening of projects with positive open mind duly ensuring proper utilization of machines.

2.7 Creation of staff and filling of vacancies need to be given due priority.

2.8 Machines must be inspected regularly by Open Line Officers also for getting feedback on deficiencies.

2.9 Consumption of diesel and other engine oils & lubricants used on Track Machines should be properly monitored for the proper functioning of the machines.

2.10 AMC for all the machines should be finalized in time.

2.11 Shadow blocks should be fully utilized.

2.12 Route learning by operators should be monitored.

2.13 Railway Board orders for shifting of machines to other Railways whenever issued shall be honored and implemented.

2.14 Machines shall be regularly sent for POH as per planning. Defaulter Railways may please note and ensure.

3.0 The targets and performance along with utilization of machines were reviewed. Progress of all the Track Machines in general is lagging behind the targets.

3.1 Details of poor performing machines on different Railways is given below :

S.No.	Railway	Machines
1	CR	TRT, BCM(Plain), UNIMAT & UTV
2	ER	TRT, SBCM, & MPT
3	ECR	T-28, PQRS & BCM(T/O)
4	ECOR	T-28, PQRS, SBCM, UNIMAT, WST, MPT, DTS & BRM
5	NR	RGM, TRT, T-28, BCM(T/O), BCM(PLAIN), SBCM, HOT-3X & HOT-CSM
6	NCR	RGM, T-28, BCM(T/O), HOT-3X, HOT-CSM, UNIMAT & WST
7	NER	T-28, PQRS, BCM(T/O), BCM(Plain), SBCM, HOT-CSM & UTV
8	NFR	T-28, BCM(T/O), BCM(Plain), MPT & DTS
9	NWR	T-28, PQRS, BCM(Plain), SBCM, UNIMAT & WST
10	SR	TRT & T-28
11	SCR	RGM, T-28, PQRS & HOT-3X
12	SER	T-28, PQRS, BCM(T/O), MPT & UTV
13	SECR	T-28, BCM(T/O), HOT-3X, HOT-CSM, UNIMAT, WST, DTS & BRM
14	SWR	BCM(Plain), HOT-CSM, WST & DTS
15	WR	T-28, PQRS, BCM(T/O) & BCM(Plain)
16	WCR	TRT & T-28

Zonal Railways are required to review the factors affecting utilization of track machines and take all the necessary steps on priority for making up the shortfall in the targets set.

3.2 Mechanization in general is poor on most of the Zonal Railways. The details of the poor performing Railways are given below:

S.No.	Activity	Railway
1	Track Renewal	ER, ECOR, NR, NER, SR, SCR, SER, WR WCR
2	Turnout Renewal	CR, ER, ECOR, NR, NCR, NFR, SR, SCR, SER, SECR, WR, WCR
3	Deep-Screening (Plain)	CR, ER, ECOR, NR, NCR, NFR, SER, WR
4	Deep-Screening (Turnout)	ER, ECR, ECOR, NR, NCR, NER, SR, SECR, WR,WCR

Zonal Railways are required to put more efforts for utilizing the capacity of machines for achieving 100% mechanization.

3.3 Availability of Blocks on SR & WR is 71% (highest in IR) and lowest 37% on SECR. WR has done good job with 13% improvement in block availability over last year. Zonal Railways should improve the block availability of traffic blocks for proper utilization of Track Machines.

4.0 Staff: There is large shortfall in creation of posts and vacancy position on all zonal railways except ECoR. NER has the highest shortfall in vacancies position. Railways have to put more efforts to expedite the creation of posts and filling up the vacancies required for operation and maintenance of track machines on priority.

5.0 Camp Coaches: There is shortfall of camp coaches on railways. Adequate no. of SH coaches has been allotted to railways from Coaching Dte for conversion. Adequate fund has also been allotted to railways from TMC Dte. for conversion of coaches into camping coaches. Railways should expeditiously utilize this fund for conversion/modification coaches only. 50 Nos. new coaches has been sanctioned for track machines, allotment of these coaches has been done. NR & SECR has done good job by modification of coach in its IOH workshops. The photograph of this coach has been displayed in meeting. SECR may share the experience with other railways.

6.0 Maintenance Facilities for Track Machines: Presently 2 CPOH workshops are functioning on IR one each in NCR & SCR, 2 more CPOH (one each in ER & WR) have been sanctioned. Funds have been sanctioned for CPOHs in WP of 2015-16. WR has demanded more fund for CPOH which may be given from the ER's fund. WR may submit the details of requirement to Railway Board. There should be one Zonal Maintenance Depot/IOH workshop in each zonal railways. Zonal railways are required to develop facilities required for IOH workshops as given in para 6.2 of IRTMM. In addition to IOH workshops, satellite depots should be set up to meet the repair and maintenance needs (para 6.3.3 of IRTMM). Zonal railways not having satellite depots may get the work sanctioned in next

7.0 Transfer/allotment of Track Machines:

NFR has requested for one WST/CSM & one Unimat for use on construction sites. NFR has been supplied with 7 additional machines in last one year including 5 tamping machines. The utilization in NFR even in Construction organization is poor. In the mean time one WST from new allotment has been allotted to NFR to take care of Construction demand as requested. NFR should improve the utilization of available machines.

ii) SER has requested one BCM & one Unimat machines. SECR has been advised to spare Unimat-8286 for SER as ordered by Railway Board. One new BCM has been allotted to SER from recent Railway Board's contract.

iii) NER has requested for one Unimat. One new Unimat has been allotted to NER from recent Railway Board's contract.

iv) NR has requested for one TRT & PQRS machines. One PQRS has been transferred from ER to NR. TRT is also ordered for shifting from SCR to NR after completing balance 8 km work in SCR.

v) SR has requested for one Unimat machine. SR is required to create posts and filling up vacancies for operation and maintenance of existing track machines in the Railways.

vi) ECoR: GM/ECoR's letter for additional machines was discussed. Railway is having adequate no. of machines. The utilization of machines needs to be improved:

- 7 Track Machines are already supplied to ECoR in last one year (1 HOT-3X, 1 HOT-CSM, 1 UNIMAT, 1 PQRS, 2 BRMs and 1 UTV).
- Allotment of 2 machines (1 BCM & 1 UNIMAT) was cancelled on request of ECoR in Jun'2014.
- Existing T-28 machine has laid only 4 points in the year so far, demand of additional T-28 is not justified. However, it has been spared from SER whenever required for specific purpose.
- Utilization of available 2 no. of SBCMs is very poor. Only 3.33 km per mc per month is being done. However, one SBCM will be allotted from new tender under finalization.

vii) NWR: One additional WST machine was requested for construction projects, was spared.

viii) WR: Requested to spare one WST which is diverted to NFR. AMCE decide to divert the machine to NFR in view of additional demand of Construction organization. The requirement of WR will be considered in distribution of HOTS-3X machines.

General:

i) SECR has requested for CPOH status for its IOH workshop at NGP and submitted detailed report which is under consideration in Board's office. In this regard, NCR & SCR may send team to NGP for the inspection of IOH workshop for available facilities in respect to the facilities mentioned in para 6.2 of IRTMM.

ii) BCMs in NFR are not being utilized for 6 months due to rain, these machines may be transferred to other needy/nearby railways temporarily for the period of 6 months (April to September).

iii) MPT-2002 of NFR is not working properly after POH at CPOH/ALD. CPOH may jointly survey the machine with NFR for rectification of problems.

Director Track(MC)
Railway Board

GOVERNMENT OF INDIA
MINISTRY OF RAILWAY
RAILWAY BOARD

261

No.2000/Track-III/TK/18 Vol.II

New Delhi dated 24.11.2015

CE/ TM
All Indian Railways

Sub: Squeezing time of Tamping

The squeezing time of tamping has been laid down vide Para 3.1.3 (iv) of IRTMM – "*For maintenance packing, squeezing time of 0.4 second to 0.6 second should normally be adequate. Higher squeezing time may be required for track with caked up ballast*"

During various reviews, Board (ME) has expressed concern that retentivity of tamping is not satisfactory leading to unsatisfactory riding quality. During discussions with field Officers also, it has been reported that retentivity of tamping is not satisfactory leading to frequent requirement of tamping.

In order to ascertain the international practice regarding tamping parameters, the European Standards laid vide EN-13231-1 were checked. It is noted that in terms of para 5.2.5 of this Standard, the squeezing time shall not be less than 0.8 seconds. The recommended value ranges from 1.0 second to 1.2 seconds (copy of EN enclosed).

With the approval of competent authority, Railways are advised to ensure that squeezing time shall not be less than 0.8 seconds. The recommended value of squeezing i.e 1.0 second to 1.2 seconds is to be followed on all Tamping machines.

Please ensure Compliance.

24/11/15

(T.K. Pandey)
Director Track (MC)
Railway Board

Copy- Executive Director/TM , R.D.S.O., Lucknow for information and necessary action please.

5.2.2 Lift of track

The maximum lift of track per tamping pass is dependent of the construction of the track (type of rails and sleepers), the geometrical dimensions of the tamping machine (bending line of the rail) and the required compaction level.

The maximum lift of track per tamping pass shall be set by the customer.

The lift value shall be recorded for each rail at each tamping cycle.

NOTE The lift of track in this clause describes the lifting by means of the tamping tools during operation, not the real lifting achieved.

5.2.3 Shift of track

The maximum shift of track per tamping pass is dependent of the construction of the track (type of rails and sleepers), the geometrical dimensions of the tamping machine (tensile stress in the rail) and the required compaction level.

The maximum shift of track per tamping pass shall be set by the customer.

The maximum shift value shall be documented.

NOTE The shift of track in this clause describes the shifting by means of the tamping tools during operation, not the real shifting achieved.

5.2.4 Work depth of tamping tools

The work depth of the tamping tools is dependent of the construction height of the track (height of rails, sleepers and rail fastening systems).

The distance of the upper line of the tamping tool plate to the lower face of the sleeper (including under sleeper pads) shall be in the range of 15 mm to 30 mm. Change of the track structure height requires adjustment of the tamping depth. This adjustment shall be documented.

The values for the work depth shall be set by the customer.

5.2.5 Squeezing time of tamping tools

The squeezing time of the tamping tools is dependent of the type of ballast and the lift of the track.

One measurement per squeezing shall be carried out. The squeezing time shall not be less than 0,8 s. The recommended value ranges from 1,0 s to 1,2 s.

The values for the squeezing time shall be set by the customer.

5.2.6 Documentation of functioning of the controlling system / device

Prior to and after every tamping work a functional check of the controlling system/device should be carried out according to the manufacturer's manual.

The results of this functional check shall be documented.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

No.2014/Track-III/TK/3

New Delhi, dt.24.11.2015

Chief Engineer/TMC
All Indian Railways

Sub: Machine-wise "Master" required for calibration of parameters.

Ref: Minutes of Chief Engineers/TM seminar held on 17th & 18th of August 2015 at IRICEN, Pune.

Find enclosed Machine-wise "Master" required for calibration of parameters submitted by NCR. It is advised to implement the same in railway.

24/11/15

(T.K. Pandey)
Director, TK(MC)
Railway Board

NORTH CENTRAL RAILWAY

Head Quarter Office
Engineering Department
Allahabad

No: 219-W/TMC /NCR /CE(TMC)'s Seminar Dated: 18 .09.2015

Executive Director/Track (Machine)
Railway Board, New Delhi.

Sub: Machine wise "Master" required for calibration of parameters.

As desired during CE/TMC's seminar held at IRICEN/Pune on 17th & 18th August' 2015, please find enclosed herewith the following lists on the above subject for circulation to all Zonal Railways.

(a) Machine-wise list of "Masters" required for calibration of parameters as Annexure-A.
(b) Details of 'Master' as Annexure-B.

D.A.: As above.

(C. P. Gupta)
Chief Engineer/Track Machine

Machinewise list of 'Masters' required for calibration of parameters

Annexure-A

S.N.	Parameter to be calibrated	Master Ref	Range of Master	CSM	09-3X	WST	UNI-2S	UNI-3S	DGS	BCM	FRM
	Hydraulic System										
1	Squeezing Pressure	PG-3	0-250 bar	100-120 bar	100-120 bar	100-120 bar	100-130 bar	100-130 bar	N/A	N/A	N/A
2	System Pressure	PG-3	0-250 bar	140 bar	140 bar	140bar	140bar	140bar	100 bar	N/A	175 bar
3	Vibration Pressure left	PG-3	0-250 bar	150 bar	210 bar	180 bar	150 bar	150 bar	N/A	N/A	N/A
4	Vibration Pressure Right	PG-3	0-250 bar	150 bar	210 bar	180 bar	150 bar	150 bar	N/A	N/A	N/A
5	Counter Pressure of Small Squeezing	PG-3	0-250 bar	35-40 bar	55bar	35-40 bar	N/A	N/A	N/A	N/A	N/A
6	Counter Pressure of Big Squeezing	PG-2	0-160 bar	140 bar	130 bar	140 bar	N/A	N/A	N/A	N/A	N/A
7	Accumulator Pressure 32L-1	PG-6	0-280 bar	85 bar	85 bar	85 bar	85 bar	85 bar	N/A	N/A	N/A
8	Accumulator Pressure 32L-2	PG-6	0-280 bar	N/A	85 bar	N/A	N/A	N/A	N/A	N/A	N/A
9	Accumulator Pressure 32L-3	PG-6	0-280 bar	N/A	85 bar	N/A	N/A	N/A	N/A	N/A	N/A
10	Accumulator Pressure 20L	PG-6	0-280 bar	100 bar	N/A	100 bar	N/A	N/A	N/A	N/A	N/A
11	Accumulator Pressure 10L	PG-6	0-280 bar	N/A	N/A	N/A	100 bar	100 bar	60 bar	N/A	N/A
12	Accumulator Pressure2.6 L-1	PG-6	0-280 bar	20 bar	20 bar	20 bar	N/A	N/A	N/A	N/A	N/A
13	Accumulator Pressure2.5 L-2	PG-6	0-280 bar	20 bar	20 bar	20 bar	N/A	N/A	N/A	N/A	N/A
14	Accumulator Pressure2.5 L-3	PG-6	0-280 bar	N/A	20 bar	N/A	N/A	N/A	N/A	N/A	N/A
15	Accumulator Pressure2.5 L-4	PG-6	0-280 bar	N/A	20 bar	N/A	N/A	N/A	N/A	N/A	N/A
16	Accumulator Pressure2.5 L-5	PG-6	0-280 bar	N/A	20 bar	N/A	N/A	N/A	N/A	N/A	N/A
17	Accumulator Pressure2.5 L-6	PG-6	0-280 bar	N/A	140 bar	N/A	N/A	N/A	N/A	N/A	N/A
18	Accumulator Pressure2.5 L-7	PG-6	0-280 bar	N/A	140 bar	N/A	N/A	N/A	N/A	N/A	N/A
19	Accumulator Pressure2.5 L-8	PG-6	0-280 bar	N/A	140 bar	N/A	N/A	N/A	N/A	N/A	N/A
20	Pressure setting of Safety valve for system Pressure	PG-3	0-250 bar	175 bar	175 bar	175 bar	175 bar	175 bar	175 bar	210 bar	210 bar
21	Pressure setting of Oil Cooler motor	PG-3	0-250 bar	100 bar	210 bar	150 bar	150 bar	150 bar	150 bar	120 bar	200 bar
22	High pressure setting	PG-3	0-250 bar	150 bar	150 bar	180 bar	180 bar	180 bar	N/A	N/A	N/A
23	ZF Oil Pressure	PG-5	0-30 bar	12-15 bar	12-15 bar	12-15 bar	12-15 bar	12-15 bar	12-15 bar	N/A	N/A
24	Charging Pressure of Variable Pumps	PG-5	0-30 bar	30 bar	30 bar	N/A	N/A	N/A	30 Bar	30 bar	30 bar
25	Work Drive Pressure	PG-4	0-600 bar	0-210 bar	0-240 bar	160bar	N/A	N/A	210 bar	N/A	N/A
26	Satellite bypass Pressure	PG-3	0-250 bar	160 bar	160 bar	N/A	N/A	N/A	N/A	N/A	N/A
27	Control Pressure	PG-2	0-600 bar	N/A	N/A	N/A	N/A	N/A	N/A	60 bar	N/A
28	Treavel Drive Pressure	PG-4	0-600 bar	N/A	N/A	N/A	N/A	N/A	N/A	0-380 Bar	0-380 Bar
29	Main Conveyor Pressure	PG-4	0-600 bar	N/A	N/A	N/A	N/A	N/A	N/A	315 Bar	315 Bar

S.N.	Parameter to be calibrated	Master Ref	Range of Master	CSM	09-3X	WST	UNI-2S	UNI-3S	DGS	BCM	FRM
30	Waste Conveyor drive Pressure	PG-4	0-600bar	N/A	N/A	N/A	N/A	N/A	N/A	230 bar	315 Bar
31	Waste Conveyor U/P Pressure	PG-3	0-250 bar	N/A	N/A	N/A	N/A	N/A	N/A	150 bar	N/A
32	Distributor drive pressure	PG-4	0-600 bar	N/A	N/A	N/A	N/A	N/A	N/A	230 bar	315 bar
33	Cutting Chain drive Pressure	PG-4	0-600 bar	N/A	N/A	N/A	N/A	N/A	N/A	350 bar	350 bar
34	Clutch pressure front	PG-5	0-30 bar	N/A	N/A	N/A	N/A	N/A	N/A	15 bar	15 bar
35	Clutch pressure Reas	PG-5	0-30 bar	N/A	N/A	N/A	N/A	N/A	N/A	15 bar	15 bar
36	Chain guide left	PG-4	0-600 bar	N/A	N/A	N/A	N/A	N/A	N/A	140 bar	N/A
37	Chain guide left	PG-4	0-600 bar	N/A	N/A	N/A	N/A	N/A	N/A	140 bar	N/A
38	Rail clamp pressure	PG-3	0-250 bar	N/A	N/A	N/A	N/A	N/A	N/A	160 bar	N/A
39	Chain tension pressure	PG-3	0-250 bar	N/A	N/A	N/A	N/A	N/A	N/A	150 bar	N/A
40	Cutter bar lifting	PG-3	0-250 bar	N/A	N/A	N/A	N/A	N/A	N/A	160 bar	N/A
41	Cutter bar locking	PG-3	0-250 bar	N/A	N/A	N/A	N/A	N/A	N/A	160 bar	N/A
42	L/U up down	PG-3	0-250 bar	N/A	N/A	N/A	N/A	N/A	N/A	160 bar	N/A
43	Ac drive	PG-3	0-250 bar	N/A	N/A	N/A	N/A	N/A	N/A	120 bar	N/A
44	Screen Unit Vibration Pressure	PG-4	0-600 bar	N/A	N/A	N/A	N/A	N/A	N/A	390 bar	350bar
45	Screen tilting Pressure	PG-3	0-250 bar	N/A	N/A	N/A	N/A	N/A	N/A	140 bar	175 bar
46	Distributor Conveyor in/out	PG-2	0-160 bar	N/A	N/A	N/A	N/A	N/A	N/A	50 bar	175 bar
47	Excavating conveyor Pressure	PG-4	0-600 bar	N/A	N/A	N/A	N/A	N/A	Not applicable	N/A	315 bar
48	Hydraulic Vertical load Pressure	PG-2	0-160 bar	N/A	N/A	N/A	N/A	N/A	20-100 bar	N/A	N/A
49	Vibration Pressure of Vibration Unit	PG-4	0-600 bar	N/A	N/A	N/A	N/A	N/A	350 bar	N/A	N/A
50	Pre load Pressure	PG-2	0-160 bar	N/A	N/A	N/A	N/A	N/A	60 bar	N/A	N/A
51	Broom drive pressure	PG-3	0-250 bar	N/A	N/A	N/A	N/A	N/A	N/A	N/A	175 bar
	Pneumatic System										
52	Pneumatic System Pressure	PG-1	0-10 bar	7 bar	7 bar	7 bar	7 bar	7 bar	7 bar	7 bar	7 bar
53	Pneumatic Intermediate Pressure	PG-1	0-10 bar	4 bar	4 bar	4 bar	4 bar	4 bar	4bar	5 bar	5 bar
54	Break Pressure	PG-1	0-10 bar	3.8 bar	3.8 bar	3.8 bar	3.8 bar	3.8 bar	3.8 bar	3.8 bar	3.8 bar
55	Vertical preload Pressure	PG-1	0-10 bar	2 bar	2 bar	2 bar	2 bar	2 bar	2 bar	N/A	N/A
56	Satellite Brake Pressure	PG-1	0-10 bar	2,5 bar & 5.5 bar	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Electronic System										
57	Cross level by Front Pendulam	MM-1	N/A	25mv/mm	25mv/mm	25mv/mm	25mv/mm	25mv/mm	25mv/mm	N/A	N/A

S.N.	Parameter to be calibrated	Master Ref	Range of Master	CSM	09-3X	WST	UNI-2S	UNI-3S	DGS	BCM	FRM
58	Cross level by Middle Pendulam	MM-1	N/A	25mv/mm	25mv/mm	25mv/mm	25mv/mm	25mv/mm	25mv/mm	N/A	N/A
59	Cross level by Rear Pendulam	MM-1	N/A	25mv/mm	25mv/mm	N/A	N/A	25mv/mm	25mv/mm	N/A	N/A
60	Height Transducer Value	MM-1	N/A	90mv/mm	90mv/mm	90mv/mm	90mv/mm	90mv/mm	90mv/mm	N/A	N/A
61	Super Elevation Value	MM-1	N/A	50mv/mm	50mv/mm	50mv/mm	50mv/mm	50mv/mm	50mv/mm	N/A	N/A
62	General Lift Value	MM-1	N/A	50mv/mm	50mv/mm	50mv/mm	50mv/mm	50mv/mm	N/A	N/A	N/A
63	Vesine Value by Lining Transducer	MM-1	N/A	23.1mv/mm	23.1mv/mm	23.1mv/mm	23.1mv/mm	23.1mv/mm	N/A	N/A	N/A
64	Versine Value by Measuring Transducer	MM-1	N/A	23.1mv/mm	23.1mv/mm	23.1mv/mm	23.1mv/mm	23.1mv/mm	N/A	N/A	N/A
65	Vesine Value by Versine Potentiometer	MM-1	N/A	50mv/mm	50mv/mm	50mv/mm	50mv/mm	50mv/mm	N/A	N/A	N/A
66	Slew Value by Slew Potentiometer	MM-1	N/A	50mv/mm	50mv/mm	50mv/mm	50mv/mm	50mv/mm	N/A	N/A	N/A
67	Tamping Depth Value	MM-1	N/A	25mv/mm	25mv/mm	25mv/mm	25mv/mm	25mv/mm	N/A	N/A	N/A
68	Engine oil pressure gauge(NTA)	PG-5	0-30 bar	N/A	0-10 bar	0-10 bar	0-10 bar	N/A	N/A	0-5 bar	N/A
69	Engine Temp gauge(NTA)	T-1	40-120°C	N/A	40-120 degree C	40-120 degree C	40-120 degree C	N/A	N/A	40-120 degree C	N/A
70	Engine oil pressure gauge(KTA)	PG-5	0-30 bar	0-10 bar	0-10 bar	N/A	N/A	0-10 bar	0-10 bar	0-5 bar	0-10 bar
71	Engine Temp gauge(KTA)	T-1	40-120°C	40-120 degree C	40-120 degree C	N/A	N/A	40-120 degree C	40-120 degree C	40-120 degree C	40-120 degree C
72	Vibration frequency	Tachometer-1	0-9999 r.p.m.	2100	2100	2100	2100	2100	35 Hz	N/A	N/A
73	Engine RPM-1	Tachometer-1	0-9999 r.p.m.	2100	2100	2100	2100	2100	2100	2200	2100
74	Engine RPM-2	Tachometer-1	0-9999 r.p.m.	N/A	1800	N/A	N/A	N/A	N/A	2200	N/A
	Total no. of parameters			37	46	33	28	29	23	32	22
	Total no.of master required			9	9	9	6	6	9	8	8

14/9/15 AXEN/CPOH

14/9/15 AXEN/CPOH

SSE/CPOH

Details of Masters

Annexure -B

SN	CODE NO.	NAME OF EQUIPMENT / DEVICE	MAKE / MODEL	RANGE	LEAST COUNT	ERROR FOUND	FREQUENCY OF CALIBRATION	CALIBRATION AGENCY INSIDE /OUTSIDE
1	PG-1	PRESSURE GAUGE	WIKA	0-10 bar	0.2 Bar	NIL	ONE YEAR	BAGSON, DELHI
2	PG-2	PRESSURE GAUGE	WIKA	0-100 bar	5 Bar	NIL	ONE YEAR	BAGSON, DELHI
3	PG-3	PRESSURE GAUGE	WIKA	0-250 bar	5 Bar	NIL	ONE YEAR	BAGSON, DELHI
4	PG-4	PRESSURE GAUGE	WIKA	0-600 bar	10 Bar	NIL	ONE YEAR	BAGSON, DELHI
5	PG-5	PRESSURE GAUGE	WIKA	0-28 bar	01 Bar	NIL	ONE YEAR	BAGSON, DELHI
6	PG-6	PRESSURE GAUGE	WIKA	0-300 bar	01 Bar	NIL	ONE YEAR	BAGSON, DELHI
7	MM-1	DIGITALMULTIMETER	RISHAB	200mV-200V (AC/DC)	-	NIL	ONE YEAR	BAGSON, DELHI
8	HT-1	HAND TECHO METER	TECHNIKA	0 TO 10000 RPM	2RPM	NIL	ONE YEAR	BAGSON, DELHI
9	T-1	TEMPERATURE GAUGE	PRICOL	40-120° C	5° C	NIL	ONE YEAR	BAGSON, DELHI
10	Techo-1	TACHOMETER-1	VDO	0-9999 r.p.m.	1 r.p.m.	NIL	ONE YEAR	BAGSON, DELHI

XEN/CROH

AXEN/CROH

SSE/CROH.

Pl issue
CP 106
25

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

(269)

No 2015/LML-I/19/2 New Delhi, dated 25.06.2015

General Manager
All Zonal Railways

Principal Chief Engineer
All Zonal Railways

Sub: Procedure for issue of 'No Objection Certificate' for construction/ redevelopment of Government and private building on land adjoining railway boundary

Ref: Railway Board's letter No 2008/LML/19/17 dated 16.2.2010 and No 94/LM(L)/14/22 dated 29.8.95

The construction of Government and private buildings near the railway land is governed by para 827 of the Indian Railways Works Manual (IRWM). The basic intention behind the stipulations of the para is to safeguard Railway's interest in such a manner that no future encroachments take place and there is no accrual of easement right such as, Right of Way, Right to discharge sullage and storm water, etc. on railway land over a period of time. Although, it has been mentioned that an open space of approximately 30 metres between the Railway land boundary and the nearest edge of the building (the exact space to be left being governed by the local conditions) be suffice, it is also stipulated that in cities and towns, where land is valuable, it is not expected of the land owner of a plot to leave a large vacant space between his building and the railway boundary and it is deemed that Railway's interest will be adequately safeguarded if sufficient vacant space is left so as to ensure development of any future road access and drainage outside the railway land and to avoid request for surrender of railway land for such facility at future date. The duties and role of railway officials regarding dealing with utilisation of land as adjoining the railway land boundary have been clearly defined in para 827 of IRWM 2000.

2.0 Railways NOC is required for construction of building within 30 metres from railway boundary as per para 827 of IRWM. Instructions with regard to issue of "No Objection Certificate" (NOC) for construction/ redevelopment of Government and private building on land adjoining railway boundary have been issued vide above referred letters. It is observed that Railways are following different procedure and in some zonal railways too much time is taken in granting NOC. Hence a need is felt to streamline the

procedure. The Party be asked to submit the following documents along with request letter duly forwarded by State Government/ Local authority to the concerned Divisional office. (270)

a) Clear title of land in favour of applicant supported by all related documents.
b) Detailed drawing of the building showing complete layout (including height, width and length).
c) Structural stability certificate by a Civil/Structural Engineer.

3.0 After receipt of request, the site verification is to be done by the field units. Field officials should check and certify the width of railway land and distance of plots from railway boundary. Rail level, ground level, etc. shall be taken. Sufficient open space be left between Railway boundary and nearest edge of building to ensure that it will not result into accrual of various easement rights as mentioned in para 1.0 above. Plot should be marked in the sketch with reference to KM post and permanent structures. Railway land width shall be verified with the certified land plan.

4.0 A drawing showing all the aspects as mentioned in para 3.0 above and other aspects like drainage arrangements, access arrangement to building, height, length, width of building and distance between Railway boundary & nearest edge of building be prepared, which will be jointly signed by all concerned.

5.0 On receipt of verification from the field units, further scrutiny of the request is to be done in the division. The proposal may also be got verified, if required, from construction units to confirm that the land is not under acquisition.

6.0 The proposal of NOC duly approved by DRM should be sent to headquarters. The plan should be signed by CE/G (or SAG officer dealing with the subject in headquarters) in token of his approval. After approval of CE/G (or the SAG officer dealing with the subject in headquarters), one copy of the plan be kept in HQ for record and the original plan be returned to the Division for issuing the NOC.

7.0 Whenever a NOC application is received in railway, the case should be thoroughly examined duly verifying the site conditions and taking into consideration factors such as safety to trains, land boundaries, disposal arrangements for waste, road

availability etc. Disposal of wastes such as sewage & Sullage water and disposal from septic tank should be away from the railway land.

271

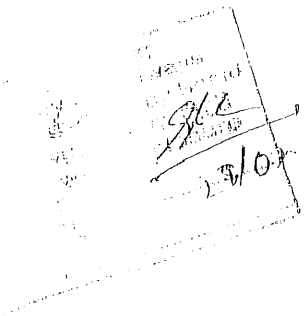
8.0 The total 60 days is the time limit for granting NOC. Railway should keep a continuous watch on construction along the railway boundary and ensure that no construction is allowed without railway's NOC. A data base of NOC cases shall be maintained by the railways.

9.0 As regards compliance of provisions of development control regulations or other rules issued by State Government/ Local authorities in this regard, it is for the State Government/ Local authority to examine and ensure compliance of the same. The provisions of IRWM are not meant to unnecessarily restrict the utilisation of the land adjoining railway land on the plea that such land may be required for future development of the railway system. *In case land is required by Railway at a future date, it is only fair that the same is acquired after paying due compensation for the land and the built up property thereof.*

10.0 In case of high rise buildings/ buildings with basements, where deep digging is involved in close proximity to Railway track, Railway should examine the drawings and construction methodology and ensure that under no circumstances safety of Railway track is affected during or after construction. If necessary, Railway may stipulate site supervision/ inspection, etc., by Railway official during construction stage as well as inspection during lifetime of the building to ensure that building/basements do not affect the safety of trains.

Please acknowledge receipt of the letter.

(Ramesh Kumar)
Director (Land & Amenities)
Railway Board



GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
RAILWAY BOARD

272

New Delhi, dated 29.02.2016

No.2014/LML-II/18/5

The General Managers,
All Indian Railways & Production Units.

Sub: Policy on licensing of railway land for commercial plots, etc.

Ref: Board's letter No.2005/LML/18/8 dated 10.02.2005 (Master Circular).

1. The clause of 'Fixing of land value' as prescribed in the above referred Board's letter dated 10.02.2005 (Master Circular) has been reviewed and henceforth para – 5.1(d) which is reproduced below as under, is hereby deleted:

'Value of land as assessed by professional evaluators of the State and Central Governments;'

2. Rest of the terms and conditions of the Master Circular dated 10.02.2005 shall remain unaltered.

3. This issues with the concurrence of the Finance Directorate of the Ministry of Railways.

4. Please acknowledge receipt of this letter.

(Ramesh Kumar)
Director/LML
Railway Board

New Delhi, dated 29.02.2016

No.2014/LML-II/18/5

Copy forwarded for information to:

(i) FA&CAO, all Indian Railways and Production Units.

(ii) Deputy Comptroller and Auditor General of India (Railways) (with 46 spares).

for Financial Commissioner (Railways)

Copy to: AM/CE, AM/Works, Adv./Bridges, FDTC(R), EDF(C) and F(X)-I Branch.

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

(273)

No.2009/LMB-II/12/1 Vol-I New Delhi, dated 11/03/2016

The General Managers,
All Indian Railways and PUs.

Sub.: **Revision of rental ceilings for Railway officers posted in Railway Zone and Board's office.**

Ref.: **Railway Board's letters of even number dated 23.11.2010 and 26/11/2013**

Uniform rental ceilings were prescribed for officers posted in all the Zonal Railways vide this office letters mentioned above. A proposal for revision of the rental ceilings prescribed for hiring private residential accommodation for railway officers of various grades posted in various classes of cities has been under examination in Board's office.

2. It has now been decided that following will be the revised rental ceilings applicable to different classes of cities for different grades of officers posted in all the Zonal Railways/Units.

Grade Pay	X-class Cities/towns	Y- class Cities/towns	Z-class Cities/towns
less than 7600	27500	14630	9130
7600	31100	14630	9130
8700	36700	22880	11000
8900	36700	22880	12870
10000	38500	22880	12870
12000	40400	23870	12870
HAG+ scale	43100	29370	14630

3. The leasing arrangements for Railway Board officers may continue on the above revised ceilings till the officer is allotted a transit /regular accommodation as per his /her entitlement. Rest of the terms & conditions shall be as mentioned in this office letter dated 23.11.2010, cited above.

4. This issues with the concurrence of the Finance Directorate of the Ministry of Railways.

(Anurag Tripathi)
Dy. Director/LM(L) – I
Railway Board

documents\letter 2.doc

No. 2009/LMB/12/1 New Delhi, Dated 11/03/2016

Copy to: FA&CAOs and FA&CAOs (Construction), All Indian Railways. 274
Copy to: Deputy Controller and Auditor General of India (Railways), 224, Railway Bhawan, New Delhi.

For Financial Commissioner/Railways
New Delhi date

No. 2009/LMB/12/1

Copy to:-

1. The General Secretary, NFIR.
2. The General Secretary, AIRF
3. The General Secretary, FROA.
4. The General Secretary, IFPOF.
5. The General Secretary, All Indian RPF Association
6. The GM, NF Railways (Const) Chief Administrative Officer (Construction) All Indian Railways.
7. The Director General, RDSO, Lucknow.
8. The General Manager and the FA&CAO, Metro Railway, Kolkata
9. The CAO and The FA&CAO, COFMOW/New Delhi.
10. The General Manager and the FA&CAO, CORE, Allahabad.
11. The Director General, Railway Staff College/Vododara
12. The Director, IRICEN/Pune, IRIEEN/Nasik Road, IRIMEE?Jamapur, IRISET/Secunderabad.
13. The Joint Director (Finance), RDSO, Lucknow.
14. Chief Mining Advisor, Ministry of Railways, Dhanbad, Bihar.
15. The Pay & Accounts Officer, Ministry of Railways (Railway Board).

(Anurag Tripathi)
Dy. Director/LM(L) – I
Railway Board

Copy to :

PPSs/PSs to - All AMs and Advisers, Railway Board
Copty to : Budget, E/G, G/Acc, E/WELFARE, E/LR, F/X-I Branches of Railway Board

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

(275

No. 20111/Proj./DMRC/30/7 New Delhi, date 23-09-2015

Director General,
RDSO,
Manak Nagar,
Lucknow

Sub: Guidelines for Noise and Vibrations for metro rail transit systems.

Ref: ED/Track/II/RDSO's letter No. CT/EF/Noise & Vib. dated 16-09- 2015

The final draft 'Noise & Vibrations guidelines for metro rail transit systems' proposed vide RDSO's letter referred above have been approved by the competent authority.

RDSO may take suitable action for uploading these guidelines on website and advising to the stakeholders.

23-09-15

(Ruth Changsan)
Director/Works(Plg.)
Railway Board
011-2309706

Copy to: (i) Executive Director/Track-II/RDSO, Manak Nagar, Lucknow
(ii) Executive Director/UTHS, RDSO, Manak Nagar, Lucknow

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

(276

No. 2011/Proj./MOU/31/1 Vol. I

New Delhi, dated 26.11.2015

To
Director General,
RDSO, Manak Nagar,
Lucknow.

Sub: Derailment guard for single track tunnels.
Ref: RDSO's letter No. CT/MRTS/Track Structure dated 12.11.2015.

Proposal submitted by RDSO vide letter under reference on the above subject has been approved by the competent authority as under:

S.No.	Location for providing Derailment Guard in single track tunnel
1	Entry of tunnel: 200 m from tunnel portal outside the tunnel to 50 m inside the tunnel.
2	Exit of tunnel: 50 m from inside of tunnel portal to 200 m outside the tunnel.
3	In curved track having radius 500 m or less including transition portion but excluding locations where check rail is provided.
4	Covering locations of all important installations e.g. Location of any sub-station or hazardous structures inside the tunnel, etc damage to which in the assessment of metro rail administration can result into serious loss of life or/and infrastructure as a result of derailment in tunnel.

The above is subject to the condition that metro railway shall carry out the risk assessment analysis for derailment in tunnels and ensure that the maintenance practices in the maintenance manual are as per the risk assessment mitigation plan.

26-11-15

(Ruth Changsan)
Director/Works Planning
Railway Board
Tel/Fax – 011-2309 7061
e-mail: ruth.dirwp@yahoo.com

Copy to:

(i) ED/UTHS, RDSO, Lucknow.
(ii) ED/Track- I , RDSO, Lucknow.

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

247

No. 2011/Proj./MoU/31/1 Vol-I

New Delhi, date 18.11.2015

Director General,
RDSO,
Manaknagar,
Lucknow.

Sub: Amendment to Annexure -C2 of the 'Procedure for Safety Certification and Technical Clearance of Metro Systems'.

Ref: RDSO's letter no.UTHS/51 dt. 24.09.2015

With reference to the above, approval of Board is hereby conveyed for amendment to the following clauses of Annexure-C2 of the 'Procedure for Safety Certification and Technical Clearance of Metro Systems', February,2015.

Clause No.	Existing Clause	Revised Clauses (with additions shown in Bold)
4.1 (ii)	"The fastening shall be with a proven track record. Fastening system should have satisfactory performance record of minimum three years in service in regular revenue operation on ballastless track on any two different established railway systems (except exclusive freight tracks) for a length of at least 5km in each metro having speed potential of at least 80 kmph & design axle load 16T irrespective of wheel profile and rail section. In this regard, supplier should submit certificate of performance from user railways administration including proof of use of the fastening system. The supplier has also to submit a certificate that the components of fastening assembly are having same material and specification in case the proven system is having different rail section and wheel profile along with details of test results as per test plan of Table1."	"The fastening shall be with a proven track record. **The** fastening system should have satisfactory performance record of minimum three years in service in regular revenue operation on ballastless track on any two different established railway systems (except exclusive freight tracks) for a length of at least 5km in each metro having speed potential of at least 80 kmph & design axle load 16T irrespective of wheel profile and rail section. In this regard, supplier should submit certificate of performance from user railways administration including proof of use of the fastening system. The supplier has also to submit a certificate that the components of fastening assembly are having same material and specification in case the proven system is having different rail section and wheel profile along with details of test results as per test plan of Table1.

		Note : For any metro system having design axle load<16 T, the above criteria shall be applicable for the axle load for which the metro system is designed "
Clause 4.7 Table 1, S N. 2 under Remarks Column	No sliding, yield or cracking is allowed for the fastener parts. Static stiffness shall be calculated in the secant range 5-80kN	No sliding, yield or cracking is allowed for the fastener parts.
Clause 4.7 Table 1, S N. 7 under Remarks Column	Test load and fastening position will be taken as per EN13481-6	Deleted
Table-1		As attached at **Annexure-A**

It is requested to amend the 'Procedure for Safety Certification and Technical Clearance of Metro Systems', February,2015 accordingly and upload the same on RDSO's website.

18.11.15

Enclo: Annexure-A

(Ruth Changsan)
Dir. /Works (Plg.)
Railway Board
Ph. 011-23097061

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

(279)

No.2011/Proj/9/2

New Delhi, Date: 12 .02.2016.

Principal Chief Engineer &
Chief Administrative Officer (Con.)
All Zonal Railways

Sub: Ballastless track of washable aprons on Indian Railways

The conventional washable aprons used on Indian Railways have design speed of 30 kmph. As such, these pose serious impediments for run through lines passing through platforms, thereby seriously reducing the sectional capacity. Also, the performance of these washable aprons, have not been satisfactory in service. Other factors such as envisaged increase of sectional speed to 160 kmph, increase in speed of loop lines to 50 kmph, introduction of heavier axle loads etc also necessitate induction of improved technology of ballastless track for washable aprons based on global experience.

The matter has been reviewed by Board. Accordingly "Technical eligibility and technical requirements for design, construction of ballastless track for washable aprons on Indian Railways" have been formulated and are enclosed as Annexure. Other tender conditions are to be kept by the Zonal Railways as per extant instructions. Open tenders with 'Two Packet System' should be adopted for this work. Although the estimated cost of the work may be of low value (less than Rs 10 Crores), Joint Ventures (JV) should also be permitted to participate in the tender in terms of Railway Board letter No 2002/C-1/CT/37 JV Pt VIII dated 14.12.2012. Detailed design and structural drawings submitted by successful bidder for construction purpose shall be approved by RDSO.

Each Zonal Railway shall construct all washable aprons on main line having speed potential in excess of 50 kmph and 2-3 washable aprons on loop lines out of sanctioned works as per the enclosed Annexure.

Please acknowledge receipt and send action plan by 10/03/16 along with details of washable aprons selected for construction as per the above instructions.

Encl: As above (7 pages)

(K.K.AGGARWAL)
Ed/Works Planning
Railway Board.
Tele: 44830 (Rly)
23386944 (DOT)
EMAIL: edwprb@gmail.com.

C/-
-DG/RDSO for kind information

Annexure (280)

TECHNICAL ELIGIBILITY CRITERIA AND TECHNICAL REQUIREMENTS FOR DESIGN AND CONSTRUCTION OF BALLASTLESS WASHABLE APRONS ON INDIAN RAILWAYS

A. GENERAL

1.0 Washable apron are required to be provided on platform lines at major railway stations of Indian Railways to facilitate cleaning of large amount of garbage and toilet droppings. Presently, washable apron are being provided mostly with use of existing sleepers over RCC slab with a bituminous layer in between. This arrangement leads to pre-mature failure of washable aprons requiring frequent maintenance impairing its functions.

2.0 Indian Railway is in effort to develop the design and construct ballastless track for washable apron systems which are proven and being used in worldwide railways successfully. The proven design may require some modifications to suit to Indian Railways conditions. This present tender is invited for such proven design of ballastless track worldwide from the bidders which can be suitable to Indian Railways conditions.

3.0 Operating Regime on Indian Railways:

a) Axle load and Speed

Traffic Type	Axle Load	Speed
Goods	25T	100 kmph (Proposed)
Passenger	21T	160 kmph (Existing) 200 kmph(Proposed)

b) Electric Traction (Minimum) : 25 KV AC.
c) Track Circuits : DC.
d) Gauge : Broad Gauge, Nominal (1673 mm).
e) Ambient Temperature : (-) 5^0C to 50^0C.
f) Rail Temperature : (-) 15^0C to (+) 76^0C.
g) Humidity : 100%

4.0 Technical Eligibility criteria-

4.1 The bidder can be a firm or a Joint Venture (JV) or a collaboration of firms, from India / abroad, who is the system provider and/or the designer and/or the construction executing agency and must have a written 'Agreement' or

'Memorandum of Understanding' to this effect. The bidder may consist of maximum three members as under:

281

i) System provider is a firm who has designed & supplied the proven ballastless track system/ washable apron including fastenings & transition.
ii) Designer is a firm who can modify the proven system to suit the Indian Railway requirements as per technical requirements detailed at para B for ballastless washable apron
iii) The construction firm is one which can execute the construction of the ballastless washable apron as per modified proposed system on Indian Railway Stations

4.2 The bidder should fulfill the following requirements:

i) The ballastless track system provider should have successfully supplied ballastless track system for a minimum length of 1 km with minimum axle load of 21T and design speed of at least 130 kmph (50 kmph for loop lines).

ii) The construction firm should have executed at least one single work of ballastless track or construction of RCC Structures such as bridges etc. for a minimum 35% of advertised value of the work within qualifying period i.e. last three financial years & current financial year. For foreign firms, the tender value in Indian currency will be converted to equivalent foreign currency based on the exchange rate prevailing on the date of publishing of the tender.

iii) Ballastless track designed and supplied by the bidder in the past as per their proposed design or as per its original design including the fastening system & transition system for a minimum axle load of 21T and design speed of at least 130 km/h (50 kmph for loop lines) should be proven system having satisfactory working performance under traffic of at least 21 T axle load and 130 kmph (50 kmph for loop lines) for at least 5 years since the date of its operation. Five years period will be reckoned from the date of opening of the tender.

iv) If design for a washable apron is modified to suit the requirement of Indian railways as per para B, then the designer firm engaged / associated should have a proven track record in designing the ballastless track of the same type (including fittings) as is being offered for at least 21T axle load & speed of 130 kmph (50 kmph for loop lines) on any world railway system including Metro systems on BG/ Standard gauge and in use for atleast three years. Three years period will be reckoned from date of opening of the tender.

5.0 At the time of submission of the offer, the bidder should submit preliminary / conceptual design and drawings of washable apron (main line and /or loop

line, as applicable) including fastening system, transition system, drainage system with construction procedure, & maintenance/repair procedure etc. The detail design including fastening system, which will be submitted on award of contract, should not deviate from the preliminary /conceptual design or its generic version on the basis of which the proposal was accepted.

252

6.0 The firm/JV shall indemnify Ministry of Railways against any claims from any other party in connection with the intellectual property rights of the drawings and design/ fastening system/ ballastless track system or any other documents submitted by the firm/JV or any other patent rights.

B. TECHNICAL REQUIREMENTS

1.0 DESIGN REQUIREMENTS

In designing washable apron for Indian Railways, the following parameters may be considered for guidance.

i) Washable apron shall be designed for the following:-

a. Main line for 25t axle load & speed 100kmph (proposed for goods traffic) & 21t axle load & speed as decided by Zonal Railway (for passenger traffic)
b. Loop line for 25 t axle load & speed 50 kmph.

ii) Dynamic augment is taken as 2.5 (as prevailing on IR)

iii) Spacing of supports to rails – preferably at every 60 cm (where ever rails are supported on sleepers/ discrete supports) so that the permissible bending stress in rails are not exceeded beyond stipulated values. The values of permissible bending stress are as under:-

For LWR section - 25.25 kg/mm^2(for 90 UTS)
For SWP - 30.25 kg/mm^2(for 90 UTS)
For FP section - 36.00 kg/mm^2(for 90 UTS)

iv) Upward reaction / pressure from support base should be clearly mentioned in design.

v) Design shall be as per relevant codes of practice such as BIS, EN, IRS, IRC and UIC with latest revision/ edition). If for any item/work, above mentioned codes are not relevant, best available Engineering practice / International codes shall be mentioned.

vi) Design & detail of suitable Transition System for smooth transition from ballasted track to ballastless washable apron on both ends shall be part of the design of washable apron.

vii) Design and detail of Expansion / Contraction Joints in washable apron at suitable intervals shall be part of the design of washable apron.

viii) Technical parameters required for foundation of washable apron shall be suitably considered for Indian conditions and shall be mentioned in

the design along with their test code & procedure. A design monograph of varying sub-grade characteristics, if applicable, to be provided by the firm /designers. 287

ix) Design service life of washable apron should be a minimum of 60 years. Concrete for RCC structures should comply relevant para of Indian Standard IS:456 - 2000 & relevant para of IRS-Concrete Bridge Code taking care of relevant durability clause for expected life of RCC as minimum 60 years.

x) Washable aprons are extensively washed with high pressure water jet on Indian Railways due to various reasons i.e. toilet discharge etc. apart from watering of coaches. Suitable arrangement should be provided for ensuring that washable apron functions properly in view of daily cleaning requirement. Provision of adequate cross slope for drainage purpose and suitable measures to prevent ingress of water must be considered. Design of proper drainage arrangements for washable apron shall also be part of design of washable apron. Necessary field visit to ascertain local conditions may be done for suggesting suitable drainage system.

xi) No settlements or separation of parts should be developed during service in the washable apron leading to impaired service or failure.

xii) Washable apron should be designed for almost maintenance free conditions except replacement of worn-out fastening components / rails after their service life is over. The 2% of the fastening components and other replaceable items which are likely to be worn out / damaged are to be supplied as spares for need based replacement in this work. The offer of the firm/JV should be inclusive of the cost of 2% fastening components as spare. No additional cost will be paid for the spares.

xiii) Ground improvement may be required before construction of ballast track system which needs to be designed to avoid problems in washable apron due to inadequacy of its foundation. The bidder should visit the site and plan for ground improvement works. The offer of the bidder should be inclusive of such ground improvement works.

xiv) The proposed system should be easy to repair & expeditious to restore in case of damages due to derailment. The time & material requirement for repair should be clearly defined along with detailed procedure of repair.

xv) Cost effective design & methodology with reasonably less construction period with opening of traffic with suitable speed restriction would be preferable. Firm/JV should advise the total days required for the construction in case of works to be taken up in the existing yards where traffic blocks will be required for taking up the works of washable apron.

xvi) Adequate corrosion protection measures must be included in design to minimize corrosion of fastening components of proposed system for

ballastless washable apron as corrosion of fastening components in washable apron is a major problem due to toilet discharge and frequent use of water for cleaning of washable apron over Indian Railways. Test report of the proposed fastening system should be submitted as per EN 13146 -6 : 2012- Test methods for fastening system - Effect of severe environmental conditions and EN ISO 9227 , Corrosion tests in artificial atmospheres – salt spray tests or as per any international standard being in practice. 284

xvii) The design should be cost effective serving all functional requirements expected of washable apron.

xviii) Any other factor considered necessary by the designer.

Changes in the above parameters (ii) and (iii) may be considered, in case the bidder is able to support it with the relevant documents and codes as per practice in other Railways.

2.0 Track Details : Ballastless track/ washable apron for Indian railways shall be designed for following track details:-

i) Rail section: Rail profile shall conform to UIC 60 (90 UTS) and Rail material shall conform to IRS-T-12-2009 class-'A', including manufacturing and testing in accordance with IRS-T-12-2009 with latest amendments.

ii) Schedule of Dimensions (SOD) and Maximum Moving Dimension (MMD) of Indian Railways for BG shall be followed.

iii) Ruling gradient: 1 in 400 or flatter

iv) Rail cant at Rail seat (inward): 1 in 20

v) Maximum degree of curvature: upto 2°for washable apron.

vi) Maximum permissible cant: 165mm

vii) Speed potential: Full speed prevailing on main line & loop line to be decided by Railways.

viii) Traffic: Mixed – passenger & freight

ix) During service if some parameter goes out in case of any unforeseen circumstances, the leeway / margin available to correct the parameter. Vertical: + 10 mm / - 3mm, Horizontal: ± 3 mm.

xix) Design temperature range: 70 degree Celsius variation of rail temperature as per zone & chart of Indian Railway LWR manual and 40 Degree variation of ambient temperature.

xi) Long welded rails (LWR) are to be used. The proposed design of washable apron should take into consideration of the forces due to LWR and interaction of LWR.

xii) It should be possible to do in-situ AT/ Flash Butt welding as per the Indian Railways welding manuals.

xiii) **Track Tolerances:** Track tolerances over washable apron when installed and later during service under floating condition should be as under:

S. No.	Parameter	Installation	Service
1	Gauge (with reference to 1673 mm, measured below 14 mm rail top) for straight track and for curve upto the radius of 350 m.	± 1 mm	± 3 mm
2	Variation in versine on curved track (20 m chord with half overlapping)	± 3 mm	± 6 mm
3	Vertical alignment over a 3.6 m chord	± 1 mm	± 6 mm
4	Lateral alignment over a 7.2 m chord on straight track	± 1 mm	± 3 mm
5	Twist on 3.6 m base	± 1 mm	± 5 mm

The above installation parameters are not sacrosanct and firms/JV can also advise their own limits for the above parameters along with basis for suggesting the changes. Variation in horizontal alignment, vertical alignment, versine, twist and gauge shall not exhibit cyclic pattern.

3.0 Traction Details :

IR has Diesel / Overhead Electric (25 KV) traction. The washable apron design should have adequate electrical insulation and should be able to demonstrate correct performance of signaling and traction equipments even in flooded condition during monsoon for which necessary local field visit may be done and the design should take care of return current as per traction.

4.0 Signaling Details :

For signaling, the track circuiting is provided through the rails. The ballastless track system should take care of the same with adequate insulation. A minimum electrical resistance of 4Ω per Km as per Indian Railway Signaling Manual needs to be ensured.

C. Abstract of the items of work for cost calculation:

The firm/JV should consider following activities /item while offering their Rates-

a) Deep dewatering by well points (if required).
b) Dismantling of existing track (if applicable).
c) Dismantling of existing washable apron (if applicable)
d) Ground improvement (if required)
e) Preparation of sub-base/sub -grade
f) Laying of washable apron (Excluding cost of rails)
g) Construction of side drains.
h) Laying of rails (to be supplied free of cost by Railways) and welding etc.
i) Assembly of track and fastening components
j) Supplying 2 % of fastening components for spare for need based replacements

k) Construction of transition system on the approaches
l) Instrumentation for monitoring performance (optional item)

286

D. CONSTRUCTION PROCESS

Firms/JV are advised to visit local sites locations as specified in tender to get familiar with typical local station environment like drainage system / extent of platform occupation/ typical cleanliness conditions, water flooding during monsoon period in station area etc. Procedure of construction process of ballastless washable apron should be mentioned in details suitable to local site conditions including necessary ground improvement. Ground improvement works shall be required to be undertaken at locations where washable apron is being constructed on the existing running line already having watering facilities due to saturation of ground below. In such cases, deep dewatering by well point during pre block period shall have to be done. In block period, removal of saturated earth to required level followed by filling of the coarse grained material in layers along with compaction by vibratory roller to have firm base shall have to be undertaken. Construction process & system offered should be easy in construction suitable to conditions prevailing on specified station in tender, clearly demonstrating how it can be constructed & installed within a reasonable time frame.

E. MAINTENANCE AND PERFORMANCE MONITORING:

The defect liability period will be for 3 years from the date of opening to traffic

After construction of washable apron, Zonal railway will monitor the performance jointly with firm/JV on quarterly basis & for three years. The performance monitoring will be based broadly upon following parameters:

i) Efficacy of fastening: Fastening system should be able to maintain track geometry (gauge, cross level, loose fittings etc.) at all times within track tolerances during service without any components breakage, excessive wear & tear.
ii) Track tolerances to be maintained at the time of construction & during trial /service should be as per para 2.0 (xiii).
iii) Any track settlement which impairs the functionality of track & washable apron.
iv) Any visible crack of width more than as stipulated in IRS Concrete Bridge code- para 10.2.1) in concrete / RCC portion of slab which impairs the functionality of washable apron.
v) Efficacy of drainage system: e.g. the slope and drains constructed should function properly even during monsoon period.
vi) Any special observations.

The decision of zonal railway about performance of the washable apron during/ after monitoring period shall be final.

****

No. RS/G/108/Heavy Axle Load

Dated: 19.10.15

All CAOs (Con)
All PCEs
Indian Railways

Sub: Guidelines for Design/Construction of formation on Indian Railway track

Ref: Railway Board's letter No. 2011/CE-II/Form/Spec. dated 14.10.15

Guidelines for design/construction of formation for Indian Railways is mostly covered in the following two documents:

1. Guidelines for Earthwork in Railway Projects GE: G-1 July 2003.
2. Guidelines and Specifications for Design of Formation for Heavy Axle Load GE: G-0014 Nov, 2009

Since all new formations are to be constructed for 25t axle load, therefore provisions regarding design of formation contained in GE: G-1 were superseded by those in GE: G-0014.

It is noticed that difficulties are being experienced in the field in adopting these Guidelines as some of the provisions of aforesaid two documents are overlapping. Moreover necessity was felt to simplify the provisions of formation design with special emphasis on the blanket layer due to difficulties experienced by field officials. Accordingly, attempt has been made to rationalise the design of formation keeping in view the economy & safety.

In view of above, provisions on design of formation have been formulated based on international practices and the same have been approved by Railway Board with the stipulation that "Chief Administrative Officers/Con shall finally decide the requirement of Blanket layer keeping the subgrade characteristics, etc. in view".

A copy of approved guidelines is enclosed herewith for adoption in new works/projects. The basic instructions (other than those contained in enclosed guidelines) detailed in aforesaid two documents (GE: G-1 and GE: G-0014) shall continue to apply.

(Brijesh Kumar)
Executive Director/CE

Copy to EDCE(P)/Railway Board for information please

Guidelines for Design/ construction of formation on Indian Railway track

1.0 The formation is the platform upon which the track structure is constructed. Its main function is to provide a stable foundation for the subballast and ballast layers. As the influence of the traffic induced stresses extends considerably beyond the depth of the ballast, the subgrade is a very important substructure component having significant influence on track performance and maintenance. Replacement/rehabilitation of track formation in service has serious repercussion on traffic and is very costly. Therefore it is necessary that adequately strong formation is built in new constructions to avoid need for rehabilitation in future for the foreseeable/planned traffic needs. Proper formation design and quality control during construction is key for providing stable formation for anticipated traffic needs.

2.0 Soil Exploration for formation design:

2.1 As formation design will primarily depend upon the type of soil being used in construction, it is essential the soil exploration is done properly for soil classification and assessment of bearing capacity. The results of soil exploration shall be reviewed and finally approved at the level of CAO/Con as this will be the basis of further design.

2.2 The soil classification shall be done as per IS: 1498. To formulate the thicknesses of formation layers, various soil groups have been combined together to simplify the classification based on %age fines, in Table-1 below:

Table – 1 Description of soil quality class

Soil Group	Soil Sub Group	Description w.r.t. %age Fines (size < 75 micron)	Equivalent soil group as per IS classification
A	--	Soil containing fines < 12%	GW, SW, GW-GM, SW-SM
B	B1	Soil containing fines < 12%	GP, SP, GW-GC, GP-GM, GP-GC, SP-SM, SP-SC, SW-SC
	B2	Soil containing fines from 12% to 50%	GM, GC, SM, SC, GM-GC, SM-SC
C	--	Soil containing fines > 50%	CL, ML, CL-ML, CI, MI

3.0 Requirement of Blanket Layer:

3.1 The provision of **blanket layer shall not be needed** when formation/ earth fill embankment have :

(i) Rocky beds except those, which are very susceptible to weathering e.g. rocks consisting of shales and other soft rocks, which become muddy after coming into contact with water.

(ii) Soil of GW, SW, GW-GM, SW-SM type

(iii) Soils conforming to specifications given in Para 4 below.

The provision of separate Blanket layer shall not be necessary when Coarse granular, well graded (Cu>7, Cc between 1 and 3) soil/quarry dust/crushed stones material of 300 mm thickness is laid as top layer. (289)

3.2 For other conditions, the system of Layered construction of embankment consisting of prepared subgrade shall normally be followed. The Prepared sub-grade should normally consist of good quality soils with fines less than 12% (A or B1).

3.3 **Thickness of Prepared subgrade and Blanket Layer:**

Embankment Fill /Soil Group	Prepared Subgrade		Thickness of Blanket Layer (mm)
	Type of Soil group	Thickness (mm)	
A	Not Required	NIL	NIL
B	**A**	500	NIL
(B1/B2)	**B1** (Fines< 12%)	350	150
C	**A**	500	Nil
	B1 (Fines< 12%)	500	150

The level of compaction of various layers of formation shall be ensured as defined in guidelines issued by RDSO.

3.3.1 In case good quality soils with fines less than 12% (A or B1), are not available for preparation of subgrade economically, soils having fines between 12% to 50% (B2) can be used over embankment fill of soil group C. In such cases, the thickness of blanket layer over prepared subgrade of 500 mm thickness shall be kept as 250mm. The thickness of blanket layer can be reduced to 150mm by use of Geotextile in consultation with RDSO.

3.3.2 In case, the prepared subgrade is not considered on economic considerations and use of other types of soil not covered by above clauses is required, Railways may approach RDSO for getting guidance on deciding blanket thickness depth.

3.3.3 Use of Geosynthetics (Geo textile/ Geo grids) shall be considered at places where it is economical to use it in combination with blanket as it reduces the requirement of thickness of blanket. Use and selection of Geosynthetics should be done in consultation with RDSO.

3.4 **Selection of top layers for design of formation as well as for blanket material as given in above Paras and further deviations from these provisions can be finally decided on techno-economic considerations by CAO(Con.) after recording the reasons.**

4.0 **Specification of Blanket Material :**

4.1 The material for blanket layer over prepared sub-grade should be well graded granular material . The following specifications shall be ensured at the time of laying:

(i) Cu > 7 and Cc between 1 and 3
(ii) Fines (passing 75 microns): 3% to 10 %.
(iii) Minimum required Soaked CBR value 25 of the blanket material compacted at 100% of MDD.

4.2 These values can generally be obtained by following the gradation as given in GE: G-0014.

No.CT/USFD

Dt: 09-07-2015

Chief Track Engineer

1. मध्य रेलवे, छत्रपति शिवाजी टर्मिनस (वी.टी.), मुम्बई–400 001
2. पूर्व रेलवे, फेयरली प्लेस, कोलकाता–700 001
3. उत्तर रेलवे, बड़ोदा हाउस, नई दिल्ली–110 001
4. पूर्वोत्तर रेलवे, गोरखपुर–273 012
5. दक्षिण रेलवे, पार्क टाउन, चेन्नैई–600 003
6. दक्षिण मध्य रेलवे, रेल निलयम, सिकन्दराबाद–500 371
7. पश्चिम रेलवे, चर्च गेट, मुम्बई–400 020
8. दक्षिण पूर्वी रेलवे, गार्डन रीच, कोलकाता–700 043
9. उत्तर पूर्वी सीमांत रेलवे, मालीगाँव, गोहाटी–781 011
10. पूर्व मध्य रेलवे, हाजीपुर–844 101
11. पूर्व तटीय रेलवे, भुवनेश्वर–751 023
12. उत्तर मध्य रेलवे, इलाहाबाद–211 001
13. उत्तर पश्चिम रेलवे, जयपुर–302 006
14. दक्षिण पूर्व मध्य रेलवे, बिलासपुर–495 004
15. दक्षिण पश्चिम रेलवे, हुबली–580 023
16. पश्चिम मध्य रेलवे, जबलपुर–482 001

Sub: Training on Inspection of Ultrasonic testing equipments for official of Zonal Railways.

Ref: i) Railway Board's letters no. Track/21/2002/0905/7/Vol.II dt: 16.12.2014.
ii) This office letter of even no. dt. 20.01.2015.

***

Training on Inspection of Ultrasonic testing equipments for official of Zonal Railways was orgiansed in M&C Dte./RDSO on 30.01.2015 and Zonal Railways were requested vide letter under refrence ii) above, to depute two officials for attending the same.

Now, one day training on inspection of Digital Ultrasonic Testing Equipment (Rail tester and Weld tester) is again being organized for the officials of Zonal Railways on 21.07.2015 (from 09.30 hrs.) at M&C Dte. of RDSO, Lucknow.

It is requested to depute two officials from each Railways, who are having valid competency certificate for Ultrasonic testing of Rails & welds, for attending the above mentioned training.

09/7/2015

संलग्न– कुछ नहीं

(राजीव कुमार)
निदेशक/रेलपथ
कृते महानिदेशक/रेलपथ

प्रतिलिपि सूचनार्थ –

कार्यकारी निदेशक/रेलपथ(पी), रेलवे बोर्ड,रेल भवन, नई दिल्ली–110 001

मूल प्रति पर नहीं–

प्रतिलिपि – निदेशक/एम&सी/आर.डी.एस.ओ/लखनऊ in reference to their Note no. M&C/NDT/Training dt. 03.07.2015 for information and necessary action.