Compendium of Schedule of Inspections and Check Lists for Inspections

November 2020

Indian Railways Institute of Civil Engineering
Pune - 411001

Foreword to Second Edition

Inspections is a very critical tool in maintenance strategy of Railway infrastructure. The Schedule of Inspection for different level of officials and items/aspects to be inspected are stipulated in different Codes/Manual/Instructions. For an individual, especially for a newly posted officer, it may be difficult to comprehend all these instructions. To facilitate this, IRICEN had published a "Compendium of Instructions related to Inspections and Competency Certificates in Engineering Department" in October'2015.

After October' 2015, there were revisions/corrections to Indian Railway Permanent Way Manual (IRPWM), Long Welded Rails (LWR) Manual, Indian Railway Track Machines Manual (IRTMM) and other relevant instructions. To incorporate these corrections, the "Compendium of Instructions related to Inspections and Competency Certificates in Engineering Department", published by IRICEN in October'2015, was being revised by Shri N. K. Mishra, Professor (Track)/ IRICEN. This work was taken further by a team of Shri. B. Ravikumar, Shri. Janardan Prasad and Shri. Sabyasachi Roy (Senior Instructors/Track/IRICEN). In the meantime, a booklet titled as "Learning the First Step by a Railway Engineer", authored by Shri. Alok Kansal, the then PED/Bridge/Railway Board and presently General Manger/Western Railway, was published by Institution of Permanent Way Engineers (India)/Northern Centre. This booklet contained practical aspects and tips for a newly joined ADEN. The revised draft of the compendium published by IRICEN earlier combined with some of the practical aspects and tips contained in the booklet authored by Shri. Alok Kansal were thoroughly revised and finalised by Shri. R. K. Shekhawat, Senior Professor/IRICEN; and this work is being presented in the form of "Compendium of Schedule of Inspections and Check Lists for Inspections".

This compendium contains summary of Schedule of Inspections for various officials, Functionaries authorised to issue Competency certificates for various track work activities, Check Lists for different Inspections and Practical aspects/tips regarding Human Resources Management, Accompanying inspections of Higher Officials, Accident Management, Quality of Works and Interaction with Traffic department. While various provisions of Codes/Manuals/other Instructions have been summarised and compiled in this compendium, it does not supersede or negate or modify any existing rules, regulations, or instructions contained in Codes and Manuals.

It is hoped that this compendium will help as a ready reckoner for any Inspecting official in Open Line, especially the newly joined ADENs; which in-turn will enhance the efficacy and quality of the inspections. Any suggestions for improvement in this publication are welcome.

Pune
November'2020

(S. K. Agrawal)
Director General/IRICEN

Foreword

Inspections are an integral part of the various safety measures undertaken by the Railways to make train-mode transport safe, comfortable efficient and punctual. Inspections in general means visits to various work centers to carefully examine the working of the system; find out the defects and to see that rules and instructions are implemented according to their spirit. It is both educative and corrective in nature.

The Civil Engineering assets comprise important part in Railway system and its upkeep is very important from safety and comfort point of view. This handbook containing compendium and instructions related to inspection of civil engineering assets would be of great help to all the inspecting officials. An attempt has been made in formulating certain framework which will be of help in facilitating focused and in-depth inspections of civil engineering assets.

The information presented in this book is no way intended to supersede or negate any existing rules, regulations, or instructions contained in various codes and manuals. Further, it is not intended to conflict with any currently effective operating and maintenance instructions and/or specifications. It also cannot be taken as exhaustive. It should, however, always be kept in mind that inspections are not merely fault finding. It is one of the most effective tools that can be intelligently used to run the system smoothly and safely.

It is hoped that all Engg. Officials will make use of present book during their inspections in improving quality of inspections and thereby bringing overall improvement in productivity and performance of Civil Engg. Assets in particular and Railway system in general.

Pune
October,2015

(Vishwesh Chaubey)
Director/IRICEN

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Chapter – 1

Inspection Schedules of Engineering Officials

(A) Inspection Schedules/Other Duties of Sr.DENs/DENs

Sl. No.	Type of Inspection	Schedule of Inspection	Reference
1.	Push Trolley Inspection	Not specified. At his discretion.	
2.	Foot Plate/ Brake Van / Rear Window*	Once in three months to cover his entire section either by Foot Plate/Rear Window, TRC or OMS.	Railway Board letter No. 2013/CE-II/CS/1 dated 20.06.2013
3.	Points & Crossings	At his discretion. May inspect certain number of Points and Crossing on running lines and those recommended for renewal.	Para 429 (5) (b) of IRPWM
4.	Level Crossing	Not specified. At his discretion.	
5.	LWR/SEJs	During routine motor trolley/push trolley or foot inspection	
6	Hot Weather Patrolling*	Not specified. At his discretion.	
7.	Curves	Not specified. At his discretion. * Location where check rail should be provided shall be decided by DEN. ** For lubrication, frequency of lubrication may be decided by DEN.	* Para 423 of IRPWM ** Para 613(3) of IRPWM
8.	Inspection of ongoing works of construction and other organization e.g. RVNL etc.	Not specified. At his discretion.	
9.	Land boundary verification	During trolley inspection at vulnerable locations.	Railway Board letter No. 2013/CE-II/CS/1 dated 20.06.2013
10.	Track renewal/ Deep Screening site	As much as possible during Trolley inspection.	
11.	AT welding site	As much as possible during Trolley inspection.	
12.	Private sidings	When referred	
13.	Review of inspection done by subordinates*	Routine checking during trolley inspection.	
14.	Schedule / frequency of recording creep	To be decided by DEN.	Para 321(4) of IRPWM
15.	Perusing TMS record of Rail /Weld failures	Frequently	Para 617(2) of IRPWM
16.	Deciding final levels at Dep Screening sites, on the basis of longitudinal and cross sections		Para 637 (1) (a) (iii) of IRPWM
17.	Scrutiny of Half yearly Report of SSE/P.Way on condition of P.Way	DEN to give his orders to SSE/P.Way, through ADEN.	Para 655(4) of IRPWM

Sl. No.	Type of Inspection	Schedule of Inspection	Reference
18.	Issue of amended P. Way Diagrams, after track renewals		Para 723(4) of IRPWM
19.	Obtaining CRS Sanction for "works of long duration" and Safety Certificate on completion of such works		Para 807 (1) (b) of IRPWM
20.	Preservation of failed pieces of Rail/Weld, in case of accidents, and sending them to RDSO for detailed investigation		Para 1104(3) (d) of IRPWM
21.	Inspection of Bridges: • Important Bridge • On reference by ADEN • Bridges with Overall Rating number (ORN) of 1, 2 or 3	• Once in a year • On reference by ADEN • Once in a year	Para 1104 of IRBM
22.	Tunnel on reference from ADEN		Para 1005 of IRBM
23.	Inspection of Track machines working in the section: (1) TEXP, CSM, DTS, WST, UNIMAT & SBCM (2) RGM ,TRT, TLE, PCCM and BCM (3) MPT, BRM, UTV, RBMV etc.	(1) Once in 3 months (2) Once in 2 months (3) As per need.	Para 114 of IRTMM
24.	Night/Surprise Inspection	Not specified. At his discretion.	Railway Board letter No. 2013/CE-II/CS/1 dated 20.06.2013
25.	Monsoon Patrolling: Identification of sections for patrolling, Period of Patrolling, Issue of Patrol Chart and Report of breaches (submission of technical report).	Not specified. At his discretion.	Para 1004 of IRPWM
26.	Gang Inspection	Not specified. At his discretion.	
27.	Railway Affecting Works/ Tanks	Peruse the inspection report of Revenue/PWD and forward the report of tanks not considered satisfactory to ADEN for inspection of such tanks and submission of report.	Para 1127 of IRPWM
28.	TRC/OMS Run	Accompany every run	Para 505 of IRPWM
29.	Inspection of Water Works	Once a year	Para 554(d) or IRWM

(B) Inspection Schedule/Other Duties of Assistant Divisional Engineer

Sl. No.	Type of Inspection	Schedule of Inspection
1.	On-Foot Inspection	Routes having speed above 110 Kmph and Multiple Line Routes: Entire section including loops lines and yards once in 6 months. Other Routes: One block section per SSE/P.Way (In-charge) each quarter.
2.	Trolley Inspection	Routes having speed above 110 Kmph and Multiple Line Routes: Entire section once in 6 months by Push Trolley/ Motor Trolley Other Routes: Entire section including loops and yard once in 3 months.
Important Note: Implementation of inspection as per schedule would be decided by PCE taking into consideration availability of infrastructure for required mobility. Till the time inspection as per schedule for on foot / trolley for routes having speed above 110 kmph is implemented, inspection would be done as per schedule under items for other routes. In case of multiple lines running closely Parallel, inspection of all the lines would be covered in one trolley inspection; else, separate trolley inspection will be required for each group of such lines. All form of trolley inspection should be done under block protection.		
3.	Fast Train Inspection	Once in a month - Entire sub-division to be covered by either Engine/ Rear Window of fast train
4.	Level Crossing	Once in six months - All level crossings.
5.	Curves	Inspect the curves based on results of TRC/ OMS/ Foot Plate and inspection details of JE/SSE (P.Way)
6.	Points & Crossings	Once a year - All Pints & Crossings on passenger running lines and 10 % of Points & Crossings on other lines.
7.	LWR / SEJ	Once in six months- All LWRs / SEJs (Preferably in hottest and coldest months).
8.	Track on Bridges	The track on Girder Bridges should be inspected as part of the annual Bridge inspection, besides normal track inspections. Channel sleepers Once in a year along with bridge inspection.
9.	AT welding site	At least one welding team under each SSE/P.Way (In-charge) in a month.
10.	USFD Test check	Monthly- Minimum two hours during regular trolley inspection.
11.	Monsoon Patrolling	When introduced, check the work of Patrolmen at night once in a month, either by Train/Push Trolley/Motor Trolley.
12.	Hot Weather Patrolling	When introduced, check the work of Patrolmen during day time (preferably between 12:00 to 16:00 hrs.) once in a month, either by Train/Push trolley/Motor Trolley.
13.	Night foot plate inspection	Once in a month - to check alertness of Gateman / Station staff, Patrolmen, Stationary watchmen, observance of speed limits by Loco Pilots, visibility of signals/engineering fixed signals / hectometer posts, riding quality etc. (Inspection should preferably be done between 00.00 hrs. to 04.00 hrs.)
14.	Bridge Inspection	Once in a year (after monsoon) — All bridges including ROB/RUB as per the procedure and instructions given in IRBM. Bridges whose condition warrant special attention to be inspected more frequently.
15.	Tunnels	Once in a Year - All tunnels before monsoon as per the procedure and instructions given in IRBM. Tunnels, condition of which, warrants special attention to be inspected more frequently

Sl. No.	Type of Inspection	Schedule of Inspection
16.	Inspection of RAW/ RAT	Every year before monsoon jointly with state authority as per the procedure and instructions given in IRPWM.
17.	Cuttings	Once in a Year before onset of Monsoon as per the procedure and instructions given in IRBM.
18.	Private Siding	Once in a Year.
19.	Land Boundary Verification	Once in a Year as per the procedure and instructions given in IRWM.
20.	Side drains, catch water drains, bridge waterways	Once in a Year before onset of Monsoon.
21.	Office and store of SSE(P.Way)	Once in a Year.
22.	Small Track Machines.	Once in Six Months
23.	Track Machines	Fortnightly: TEXP, CSM, DTS, WST, UNIMAT, BCM, SBCM, PCCM, TLE, RGM and TRT Once during deployment: MPT, BRM. UTV and all others not included above. *(Note: Inspection shall be done as per the Items and inspection checklist given in IRTMM)*
24.	Work of Other Organization like RVNL, RITES, DFCCIL, Construction etc.	As much as possible during Foot plate/Trolley inspections. Inspection to check quality of on-going work and safety of the running trains on adjacent lines.

(C) Inspection Schedule of SSE/P.Way (In-charge) and JE/SSE/P.Way (Sectional)

Sl. No.	Type of Inspection	Schedule of Inspection
1.	Foot Inspection ***Note**: Items to be checked:* *1. Condition of track including track drainage, cuttings and formation. Specific items such as completeness and condition of fittings, greasing of ERC, toe load of ERC, soundness and squareness of PSC sleepers, creep in LWR track etc.* *2. Attendance of Gang, gang work, equipment, gang chart/ diary, books with reference to prescribed schedule of track maintenance, counselling for safety and method of maintenance.* *3. Check to ensure that every man in the gang is aware of safety rules by examining them periodically at least once in two months.* *4. Routine check and review of inspection done by his subordinates.*	Routes having speed above 110 Kmph and Multiple Line Routes: SSE/P.Way (In-charge): Entire section including loops lines and yards once in 3 months JE/SSE/P.Way (Sectional): Entire section including loops lines and yards once in a fort night Other Routes: SSE/P.Way (In-charge): Entire section including loops lines and yards once in a year JE/SSE/P.Way (Sectional): Entire section including loops lines and yards once in 6 months *Note: In case of multiple lines running closely Parallel, inspection of all the lines would be covered in one on foot inspection; else separate on foot inspection will be required for each group of such lines.*
2.	Trolley Inspection Items, which are required to be checked in on foot inspection, would also be checked in trolley inspection.	Routes having speed above 110 Kmph and Multiple Line Routes) SSE/P.Way (In-charge): Independent Push/ Motor Trolley OR Accompanying ADEN/ DEN to cover once in 3 months. JE/SSE/P.Way (Sectional):Not defined *Note: All form of trolley inspection should be done under block protection.* ii) Other Routes SSE/P.Way (In-charge): Entire section including loops lines and yards once in 2 months JE/SSE/P.Way (Sectional): Entire section including loops lines and yards once in a fort night *Note: In case of multiple lines running closely Parallel, inspection of all the lines would be covered in one trolley inspection; else, separate trolley inspection will be required for each group of such lines.*
3.	Loco/ Break van / Rear window	SSE/P.Way (In-charge): Once in a fortnight JE/SSE/P.Way (Sectional): Once in a month
4.	Level Crossing (Examining Gateman's knowledge of rules, checking the equipment, track, road approaches and all other safety aspects)	SSE/P.Way (In-charge) and JE/SSE/P.Way (Sectional): All level crossings once in a month by rotation.
5.	Curves	For curves > 2^0: SSE/P.Way (In-charge) and JE/SSE/P.Way (Sectional) once in 6 months on rotation. For curves ≤ 2^0: JE/SSE/P.Way (Sectional) once in a year. SSE in-charge shall inspect based on results of

Sl. No.	Type of Inspection	Schedule of Inspection
		TRC/OMS/FP and inspection details of JE/SSE/P.Way (Sectional).
6.	Points & Crossings	Passenger and running lines: Once in three months on rotation by SSE/P.Way(In-charge) and JE/SSE/ P.Way (Sectional) Other lines and yard lines: Once in six months on rotation by SSE/P.Way(In-charge) and JE/SSE/ P.Way (Sectional)
7.	LWR / SEJ	Once in fortnight during two hottest and two coldest months on rotation by SSE/P.Way(In-charge) and JE /SSE /P.Way (Sectional) (The hottest and coldest months are specified by the DEN/Sr.DEN) Otherwise once in two months on rotation by SSE/P.Way(In-charge) and JE/SSE/P.Way (Sectional)
8.	Track on Bridges	Track on Bridges and Approaches: Once in a year in a prescribed month before monsoon by SSE/P.Way (In-charge). Channel sleepers: SSE/P.Way(In-charge): Once in 6 months by rotation with JE /SSE /P.Way (Sectional)
9.	AT welding site	SSE/P.Way(In-charge): At least once in a month, each welding team. JE /SSE/P.Way (Sectional): Not defined
10.	USFD Test check	Monthly: Minimum two hours during regular trolley inspection by SSE/P.Way (In-charge)
11.	Night Inspection	Once in a month by SSE/P.Way (In-charge).
12.	Monsoon Patrolling	SSE/P.Way (In-charge) - once in a month JE/SSE/P.Way (Sectional) - once in fortnight by train and inspection by trolley- as per the schedule laid down by administration.
13.	Hot Weather Patrolling	SSE/P.Way (In-charge): When introduced, should check the work of Patrolmen during day time (preferably between 12:00 to 16:00 hrs.) once in a month either by Train/Push trolley/Motor Trolley
14.	Night Foot Plate Inspection	Once in a month by SSE/P.Way (In-charge) and JE/ SSE/P.Way (Sectional) - to check alertness of Gateman/Station staff, Patrolmen, Stationary watchmen, observance of speed limits by Loco Pilots, visibility of signals/engineering fixed signals / hectometer posts, riding quality etc. Inspection should preferably be done between 00.00 hrs. to 04.00 hrs.
15.	Bridge Inspection	All Bridges once in a year in a prescribed month before monsoon by SSE/P.Way (In-charge) as per the procedure and instructions given in Indian Railways Bridge Manual.
16.	Tunnels	Once in a Year- All tunnels after monsoon by SSE/P.Way (In-charge) as per the procedure and instructions given in IRBM. Tunnels, condition, of which warrants special attention, to be inspected more frequently
17.	Cutting	Once in a Year immediately after monsoon by SSE/P.Way (In-charge) and before monsoon by JE/ SSE/P.Way (Sectional) as per the procedure and instructions given in IRBM.

Sl. No.	Type of Inspection	Schedule of Inspection
18.	Private Siding	Once in Six month by SSE/P.Way (In-charge) Once in three months by JE/SSE/P.Way (Sectional).
19.	Inspection of Land Boundary and encroachment	By SSE/P.Way (In-charge) Land Boundary: Once in a Year. Encroachment: Once in three months. (As per the procedure and instructions given in IRWM)
20.	Side drains, catch water drains, bridge waterways	SSE/P.Way (In-charge)- Once in a Year before onset of monsoon JE/SS /P.Way (Sectional)- Once in a year in the month of April prior to monsoon.
21.	Accompanying TRC/OMS Run	SSE/P.Way(In-charge) : Accompan each run
22.	Small track machines	SSE/P.Way (In-charge): Once in three months.
23.	Work of Other Organization like RVNL, DFCCIL, Construction etc.	SSE/P.Way (In-charge) and JE/SSE/P.Way (Sectional): As much as possible during Foot plate/ Trolley Inspection to check quality of on-going work and safety of the running trains on adjacent lines by
24.	Inspection of washable apron	Once in three months on rotation basis by SSE/P.Way (In-charge) and JE/SSE/P.Way (Sectional)
25	Inspection of Yard lines	All yard lines once in six months by SSE/P.Way (In-charge) and JE /SSE/P.Way (Sectional) by rotation.
26	Sand humps and dead end	All sand humps and dead end to be inspected by SSE/P.Way (In-charge) and JE/SSE/P.Way (Sectional) once in a month, by rotation.
27	Joint Inspection with S&T Department: (1) Points & Crossings (2) Inspection of insulated Steel Sleepers on bridges	 (1) Once in three months on rotation basis by SSE/P.Way(In-charge) and JE/SSE/P.Way (Sectional). (2) Once in six months on rotation basis by SSE/ P.Way (In-charge) and JE/SSE/P.Way (Sectional).
28	Inspection of Track Machine (When working in section)	SSE/P.Way (In-charge) & JE/SSE/P.Way (Sectional): During supervision of pre-block, during block and post-block works, but not less than once a week. *Note: Inspection shall be done as per the Items and inspection checklist given in IRTMM*

Note:

*1. Availability of a reasonable level of road access in the section is required for enabling substitution of trolley inspection by On-foot inspection. On some of the routes, which would mainly be situated in Ghat sections, this condition may not get fulfilled. Trolley inspection and On-foot inspection as per frequency for **"Other Routes"** would be followed on all such routes even in the category of **"Routes having speed above 110 Kmph and Multiple Line Routes".** These sections would be identified and approved by PCE. While identifying these sections, the lowest unit would be a complete section of an SSE/ P.Way (In-charge).*

2. It would be desirable that in the absence of trolley, UTV/Rail Borne Maintenance Vehicle (RBMV) supplement the movement by road utility vehicle. This would be particularly useful for some of the work sites, such as AT welding work, and for repairs in emergency. Availability of UTV/RBMV would enable efficient utilization of the available manpower. Steps would be taken for early induction of UTV/RBMV on these routes.

*3. Implementation of inspection as per schedule **1 (i) and 2 (i)** would be decided by PCE taking into consideration availability of infrastructure for required mobility. Till the time inspection as per schedule **1 (i) and 2 (i)** is implemented, inspection would be done as per schedule under **1 (ii) and 2 (ii)** for all the routes.* Page 28 of 416

4. For personal safety during on-foot inspection, inspecting officials, along with their assistants, should be accompanied by additional Trackman/Trackmen specially to alert officials from approaching train and have Personal Protective Equipment, which needs to be prescribed. They should also carry Approaching train warning system. Zonal Railways should prioritize its availability for higher speed routes and Ghat section.

(D) Inspection Schedule of JE/SSE/P.Way (Other than In-charge or Sectional)

Sl. No.	Type of Inspection	Schedule of Inspection
1.	Foot Inspection *Note:* *This inspection may be done with concerned Keyman in his jurisdiction and submit the report to SSE/P.Way (In-charge) through JE/SSE/P.Way (sectional)*	i. Complete section once in a month in a systematic manner of all individual passenger running lines including through lines of yard portion. ii. Other than passenger running lines – Once in three months. iii. During inspection he will note down all the irregularities like details of missing/ineffective fittings in plain track, greasing of ERC, turnouts, SEJs, Glued Joints and on bridges, cracked/damaged sleepers, unsquared sleepers, ballast deficient locations, Trespass locations, bridge approaches requiring immediate attention. iv. He will observe the packing condition under the running train especially at turnout/ SEJ/Tress pass locations /glued joints etc. and will note down in his diary, the bad patches requiring attention. v. All such locations needing attention, shall be attended by him using the gang under his jurisdiction.
2.	Inspection of Gang	i. Once in a week. ii. Include checking attendance of gang, gang work, equipment, gang chart/ diary, counselling for safety and method of maintenance. Checking of gang working of previous day. He shall also make entry of gang work in TMS on daily basis as directed.
3.	Level Crossing	Will inspect all Level Crossing once in a month for missing/loose fittings and make good the deficiencies as noted.
4.	Curves	All curves once in six months for condition of Rails, sleeper, fittings, ballast, packing, gauge and cross level etc.
5.	Points & Crossings	i. On passenger running lines once in a month. ii. Other lines - Once in three months. iii. All points and crossing shall be inspected for condition of fittings, rail, sleeper stock and tongue rail, crossing, check rails etc. including packing condition and other track Parameters. All such locations needing attention, shall be attended by him using the gang under his jurisdiction.
6.	Night Inspection	As prescribed by higher authority.
7.	Hot Weather Patrolling	Should check the work of Patrolmen during day time (preferably between 12:00 to 16:00 hrs.) once in fortnight with on foot inspection covering his entire jurisdiction.
8.	Work of Other Organization like RVNL, DFCCIL, Construction etc.	During on Foot inspection - Inspection to check safety of the running trains on adjacent lines.
9.	Inspection of SEJ	Once in fifteen days for condition of packing, fittings etc. with oiling and greasing. All such locations with deficiencies as noted shall be attended by him using the gang under his jurisdiction.

(E) Inspection Schedules of SSE/Works

Sl. No.	Type of Inspection	Schedule of Inspection	Reference
1.	Inspection of Steel Structures: (a) Structure such as workshops, running sheds, platform covers and foot over bridges. (b) Cast iron, wrought iron or pressed steel plate water tanks and stagings whether of steel section or rails. (c) Structures with roof trusses. (d) Other structures in which timber, rail or steel work is used to support any part of the structure. (e) Tie rods of arched roof excluding jack. (f) Wrought iron or mild steel tanks or sleeper cribs at temporary watering kilometrage.	Once a year during the prescribed months. Once a year on a Programmer basis. Once a year during the prescribed month. Once a year during the prescribed month Once a year during the prescribed month Once a year during the prescribed month	Para 228(a) of IRWM
2.	Inspection of Buildings	All the buildings, water supply installations, sewerage installations and drainage arrangements once a year.	Para 224(e) of IRWM
3.	Inspection of all water supply installations & Pipe lines	Frequently	Para 552(a) of IRWM
4.	Inspection of Land boundary verification at important stations and staff colonies	Once a year	Para 813(c) of IRWM
5.	Inspection of Encroachment	Once in three months	Para 814 (d) of IRWM
6.	Inspection of colony by care committee	Once in 2 months	Para 225(b)(iii) of IRWM
7.	Inspection of colony by Services Improvement Group (SIG)	As prescribed	Para 225(e) of IRWM
8.	Testing of yield of tube well and other source of water	Once a year in coordination with Electrical staff at the time when the subsoil water is at the lowest.	Para 119 (c) of IRWM
9.	Petty repair/Complaint book	Frequently	Para 225 (a & b(i) of IRWM
10.	Joint Inspection of Pumping machinery along with staff of Mechanical/Electrical Department	Once a year	Para 554 c(i) of IRWM
11.	Survey of Surviving trees	Every year	Para 720 of IRWM
12.	Storage-tanks for drinking water and for flushing purposes over offices, bungalows and quarters	Frequently	Para 552 (b) of IRWM

Sl. No.	Type of Inspection	Schedule of Inspection	Reference
13.	Inspection of leaky roofs.	Preferably be done during rainy season	Annexure 2.7 (Para 5) of IRWM
14.	Inspection of Bridges- Minor, Major and Important including ROB/RUB/FOB (except track and approaches) (as per practice of Railways)	Once in a year prior to monsoon	Para 117 and 1101 of IRBM
15.	Detail Inspection of Steel Girder less than 12.2 m clear span (as per practice of Railways)	Once in Five Years – 20% per year	Para 1101 (a) (iv) of IRBM
16.	Inspection of Tunnel (Structural part only)	Once in a Year during the prescribed month after the monsoon season	Para 1101 of IRBM

(F) Inspection Schedules of Bridge Organization

(I) Inspection Schedules of Dy.CE (Bridge)

Sl. No.	Type of Inspection	Schedule of Inspection	Reference
1.	Steel work of Bridges	Called for his inspection after scrutiny of register by DEN(Br)/AEN(Br)	Para 1106 (2)(a) of IRBM
2.	Steel work of Bridges	As directed by CBE	Para 1106 (2)(b) of IRBM

(II) Inspection Schedules of Assistant (Bridge) Engineer/Divisional Bridge Engineer

Sl. No.	Type of Inspection	Schedule of Inspection	Reference
1.	Bridges	All overstressed girders where camber loss is noted and such bridges which have been referred to him by SSE (Bridge).	Para 105 (2)(a) of IRBM
2.	Bridges	Called for his inspection based on scrutiny of the Bridge Inspector's registers.	Para 105 (2)(b)of IRBM
3	Bridges	10% test check of the Bridges inspected by SSE (Bridge) every year.	Para 105 (2)(c) of IRBM
4	Bridges	All such steel structures as ordered by the CBE at specified intervals.	Para 105 (3) of IRBM

(III) Inspection Schedules of SSE (Bridge)

Sl. No.	Type of Inspection	Schedule of Inspection	Reference
1.	All welded, RCC, PSC and composite girders and their bearing.	Within one year of Installation.	Para 107(1)(a) of IRBM
2.	Girders kept under observation	Once a year or at intervals specified by the CBE	Para 107(1)(b) of IRBM
3.	Floor system of early steel girders	Once a year	Para 107(1)(c) of IRBM
4.	Superstructure including bearings of all steel girders of span 12.2m and above, RCC, PSC and composite girder bridges.	Once in five years on planned basis.	Para 107(1) d) of IRBM
5.	Other nominated steel structures, being maintained by him	Once in five years.	Para 107(1)(e) of IRBM

(G) Inspection by officials of Track Machine Organisation

Track machine*	Inspection frequency to Track Machine officials			Reference
	Dy. CE/TM/Line	**AXEN/XEN/ TM/Line**	**SSE/TM/SDI or SD**	
RGM	3 months (owning Railway)	Monthly (owning railway)	Fortnightly (owning railway)	Para 113 of IRTMM
	Monthly (working Railway)	Fortnightly (working Railway)	Weekly (working Railway)	
TRT	6 months	Monthly	Fortnightly	
TLE/ PCCM	1 Year	2 Months	Fortnightly	
TEX/CSM/UNIMAT WST	1 Year	3 Months	Monthly	
BCM/SBCM	1 Year	2 Months	Monthly	
MPT/DTS/BRM/UTV/ RBMV	Need Basis	4 Months	2 months	

NOTE:
The inspection schedule for individual machine e.g. if there are 3 BCMs under one division, then ADEN/TM/Line shall inspect each BCM, once in two months.

Chapter -2

Functionaries authorised to issue Competency Certificate for various Trackwork Activities

Sl. No.	Nature of Activity /Work	Authorised level of Supervision/ Designation	Functionary authorised to issue competency/ permission for work.	Authority & Reference from Manual/Circular/ G&SR
1.	To carry out Maintenance work under their personal supervision in LWR/CWR for following works 1. Renewal of fastenings not requiring lifting. 2. Emergency repairs to Rail fracture 3. Inspection and Checking of SEJ, oiling and greasing and re-tightening/ renewal of fittings once a fortnight.	Keyman	Divisional Training centre. (Valid for 5 years) In exceptional cases, by ADEN for one year as per Para 1402 (3) (c).	Annexure – 14/2, Item 1, of IRPWM
2.	(a) Hot weather patrolling (b) Cold weather patrolling Protection of track and secure safety of trains in case of buckling, rail fractures, or any abnormal behaviour of track. (c) Any other Patrolling (d) For passing of train in emergency at rail/weld fracture site. (Experienced and trust worthy men from the Permanent Gang to work as Patrolman/Watchman)	Patrolman (Railway Employee)	SSE/P.Way (In-charge)	Annexure – 14/2, Item 1, of IRPWM
3.	Carrying out various activities in connection with maintenance of track as given in relevant chapters of IRPWM.	JE/P.Way	Passing of Initial/Refresher/ Promotional courses	Annexure – 14/2, Item 3, of IRPWM
4.	To use Trolley/Lorry/Dolly	Mate	ADEN (Valid for Two years)	Annexure – 14/2 Item 4 of IRPWM and G&SR Chap. XV SR 15.18.3
5.	Responsibility of keeping length of line safe for passage of trains and signal supplied are to be kept in proper order and ready for use. Having and giving correct knowledge to the men in his gang about hand signal and detonating signals and other tools or implements as may be prescribed by special instructions.	Gangmate	SSE (P.Way)	General Rule 15.11 and 15.14
6.	Correct knowledge of hand signal and detonating signals and other tools or implements as may be prescribed by special instructions.	Trackman	SSE (P.Way)	General Rule 15.12
7.	Use of private trolly only in siding can be permitted in Special condition along with Head trolly man (by name)	Non-Railway Official (use of private trolly)	CE, CSO & DRM	G&SR Chap. XV SR Para 15.18.(13)

Sl. No.	Nature of Activity /Work	Authorised level of Supervision/ Designation	Functionary authorised to issue competency/ permission for work.	Authority & Reference from Manual/Circular/ G&SR
8.	To use Motor trolley	Motor trolley driver	ADEN (Valid for Two years)	G&SR Chapter SR 15.18.3 and Annexure – 14/2, Item 4, of IRPWM
9.	To work as Gateman	Gateman/ Trackman	SSE/P.Way (In-charge)/ Divisional Training Centre (Valid for 5 Years)	Annexure – 14/2, Item 5, of IRPWM
10.	To use of trolley/ Motor Trolley/ Lorries	JE/SSE/P.Way	Senior Scale officer, (Valid for Two years)	Annexure – 14/2, Item 6 of IRPWM
11.	Supervision of work site of hand-held off-track tampers	JE/P.Way	ADEN	Para IRSTM chapter 8.1.3.1 (iii)
12.	To Supervise AT welding	JE/SSE/P.Way	TPP/Lucknow or TWC/ Vijayawada (after satisfactory completion of TW3 course)	Annexure – 14/2, Item 7 of IRPWM
13.	To execute AT weld (Provisional Certificate)	Departmental AT Welder	TPP/Lucknow or TWC/ Vijayawada (TW1 competency valid for executing 100 joint or 6 months whichever is earlier)	Annexure – 14/2, Item 8 of IRPWM
14.	To execute AT weld (Regular Competency Certificate for departmental welding)	Departmental AT Welder	TPP/Lucknow or TWC/ Vijayawada (after satisfactory completion of TW2 course with validity up to 2 years and after two years reassessment valid for next 2 year.)	Annexure – 14/2, Item 9 of IRPWM
15.	Provisional Competency certificate for welders of private firm	Contractor/ Firm AT Welder	M&C Directorate of RDSO (Valid for 2 years)	Annexure – 14/2, Item 10 of IRPWM

Sl. No.	Nature of Activity /Work	Authorised level of Supervision/ Designation	Functionary authorised to issue competency/ permission for work.	Authority & Reference from Manual/Circular/ G&SR
16.	Regular Competency Certificate for Welder of private firm	Contractor/ Firm AT Welder	M&C Directorate of RDSO (Valid for 5 years)	Annexure – 14/2, Item 11 of IRPWM
17.	Supervision of FB Welding (Min. Diploma in Mech/Elect Engg. Or BSc duly passing test as per Flash Butt welding manual provision)	Departmental/ Firm FB welding supervisor	CTE / CE(Con.)	Annexure – 14/2, Item 12 of IRPWM
18.	Welder for FB welding (Min. Class X or equivalent duly passing test as per Flash Butt welding manual provision)	Departmental/ Firm FB welders	CTE / CE(Con.)	Annexure – 14/2, Item 13 of IRPWM
19.	Supervision of FB Welding of Railway PSU/Metro (Min. Diploma in Mech/Elect Engg. Or BSc duly passing test as per Flash Butt welding manual provision)	Railway PSU / Metro/Firm FB welding supervisor	CTE	Annexure – 14/2, Item 14 of IRPWM
20.	Welder for FB welding of Railway PSU/Metro (Min. Class X or equivalent duly passing test as per Flash Butt welding manual provision)	Railway PSU / Metro/Firm FB welders	CTE	Annexure – 14/2, Item 15 of IRPWM
21.	USFD operator of departmental USFD machines (Initial certification)	Department USFD Operator	M&C Directorate of RDSO (Valid for 3 years)	Annexure – 14/2, Item 16 of IRPWM
22.	USFD operator of departmental USFD machines (Subsequent certification.)	Department USFD Operator	M&C Directorate of RDSO (Valid for 5 years)	Annexure – 14/2, Item 17 of IRPWM
23.	USFD operator of contracted USFD machines (Provisional certificate).	USFD Testing by contractor operator	M&C Directorate of RDSO (Valid for 6 months)	Annexure – 14/2, Item 18 of IRPWM
24.	USFD operator of contracted USFD machines (Regular Certificate).	USFD Testing by contractor operator	M&C Directorate of RDSO (Valid for 2 Years)	Annexure – 14/2, Item 19 of IRPWM
25.	Quality Control in charge for outsourcing of USFD.	Quality control In-charge by contractor	M&C Directorate of RDSO (Valid for 3 Years)	Annexure – 14/2, Item 20 of IRPWM

Chapter -3

Check List for different Registers for Track Maintenance (Physical/TMS)

Para 1307 of IRPWM: Due to the implementation of TMS, the following registers have been withdrawn and replaced by the TMS module:

(a) Curve Inspection Register.

(b) Points and Crossing Registers. Joint P&C Inspection register with S&T to continue but Inspection of this register to be entered in TMS by JE/SSE (P.Way).

(c) Level Crossing Register

(d) LWR Registers.

(e) Welding Registers.

(f) Rail / Weld Failure Registers.

(g) Toe Load Measuring Register.

(h) Push Trolley / Footplate / Rear Window Inspection Registers. Footplate inspection booklet of JE/SSE/P.Way/ADEN/DEN/Sr.DEN is to be maintained but entry to be made in TMS by respective officials.

(i) Rail/ Sleeper / Fastening / Ballast Inspection Registers.

(j) Sand hump Register.

(k) Gap Survey Register

(l) USFD Register.

(m) TRC Register.

(n) OMS Register.

(o) Track Diagram.

Note:

(i) The list extends to all the aforesaid P. Way Maintenance Registers, excluding Material handling and Bridge Registers. The old manual registers closed as above should be preserved in ADEN's office.

(ii) Section register, Gang chart and Gang diary shall continue to be maintained in physical form.

1. Points & Crossing Register (in TMS)

(i)	Check Inspection Planning Report. Go to Report > Inspection > 3. Inspection Planning. Choose PWI and year, press GO. The asset number color indicates the position of inspection. Inspection planned and done in same month. Inspection planned in the month but inspection done in later month. Inspection planned in the month and month is not over. Inspection planned and not done so far Note down the points and crossings to be inspected during sample month.	Yes/No
(ii)	Check whether planned inspections done by the official or not. Go to Report > Inspection > 4. Inspection Register > select 'feature type', 'from date', 'to date' and click on 'Click here to see Inspections of individual assets' from the list choose same P&C no. and check details of inspection done during the month or not.	Yes/No
(iii)	Whether compliance of inspection note against each point is recorded?	Yes/No

2. Curve Register (in TMS)

(i)	Check Inspection Planning Report. Go to Report > Inspection > 3. Inspection Planning. Choose PWI and year, press GO. The asset number color indicates the position of inspection. Inspection planned and done in same month. Inspection planned in the month but inspection done in later month. Inspection planned in the month and month is not over. Inspection planned and not done so far Note down curve number to be inspected during sample month.	Yes/No
(ii)	Check whether planned inspections done by the official or not. Go to Report > Inspection > 4. Inspection Register > select 'feature type', 'from date', 'to date' and click on 'Click here to see Inspections of individual assets' from the list choose same P&C no. and check details of inspection done during the month or not.	Yes/No
(iii)	Whether compliance of inspection note against each point is recorded?	Yes/No

3. Long Welded Rail (LWR) - Continuous Welded Rail (CWR) Register

(i)	Check Inspection Planning Report. Go to Report > Inspection > 3. Inspection Planning. Choose PWI and year, press GO. The asset number color indicates the position of inspection. Inspection planned and done in same month. Inspection planned in the month but inspection done in later month. Inspection planned in the month and month is not over. Inspection planned and not done so far Note down the LWR numbers to be inspected during sample month.	Yes/No
(ii)	Check whether planned inspections done by the official or not. Go to Report > Inspection > 4. Inspection Register > select 'feature type', 'from date', 'to date' and click on 'Click here to see Inspections of individual assets' from the list choose same LWR no. and check detail of inspection done during the month or not.	Yes/No
(iii)	Whether compliance of inspection note against each point is recorded?	Yes/No

4. Level Crossing Register

(i)	Check Inspection Planning Report. Go to Report > Inspection > 3. Inspection Planning. Choose PWI and year, press GO. The asset number color indicates the position of inspection. Inspection planned and done in same month. Inspection planned in the month but inspection done in later month. Inspection planned in the month and month is not over. Inspection planned and not done so far Note down the Level Crossing number to be inspected during sample month.	Yes/No
(ii)	Check whether planned inspections done by the official or not. Go to Report > Inspection > 4. Inspection Register > select 'feature type', 'from date', 'to date' and click on 'Click here to see Inspections of individual assets' from the list choose same LC no. and check detail of inspection done during the month or not.	Yes/No
(iii)	Whether compliance of inspection note against each point is recorded?	Yes/No

5. Track Recording Car Register

(i)	Whether latest TRC report is uploaded on TMS. Go to 'Reports(M-Z) > TRC > TRC Report > select all parameters and check the date of latest run from drop down menu	Yes/No
(ii)	Check on locations needing attention based on TRC from 'Reports (A-L)> Locations Needing Attention > select indirect >TRC	Yes/No

6. Section Register

This register is maintained by and kept in the office of SSE(P.Way) of the section. It contains all important information including a brief history of the section. A few pages for major unusual occurrences are also included.

Physical Register

SN	Item	Check	Reference
(i)	Whether register is updated?	Yes/No	Para 656 of IRPWM
(ii)	Whether brief history of the section is mentioned?	Yes/No	Para 656 of IRPWM
(iii)	Whether all unusual occurrences are recorded with date?	Yes/No	Para 656 of IRPWM
(iv)	Whether register is scrutinized at the beginning of every year by the ADEN?	Yes/No	Para 656 of IRPWM

TMS

(i)	Check for latest entry by going to 'Reports(M-Z)> Misc. Registers	Yes/No

7. Encroachment Register

This register is maintained by and kept in the office of SSE (P.Way) of the section. In this register, one page is allotted to each encroachment, so that about 15 years record is available at a glance regarding efforts made in the removal of the encroachments.

Physical Register

SN	Item	Check	Reference
(i)	Whether register is updated ?	Yes/No	Para 813 of IRWM
(ii)	Whether a separate page is allotted for each encroachment ?	Yes/No	Para 813 of IRWM
(iii)	Whether action taken / follow up action is recorded ?	Yes/No	Para 813 of IRWM
(iv)	Whether any encroachment once mentioned is deleted ?	Yes/No	Para 813 of IRWM

TMS

(i)	Check on entries on encroachment from 'Reports(A-L) > Land Management	Yes/No

8. Land Boundary Verification Register

This register is maintained by and kept in the office of SSE(P.Way) of the section. One page is allotted to record availability and location of boundary stones in each kilometer. About 10 years record is available at a glance about attentiveness exercised in maintenance and fixation of the land boundary stones.

Physical Register

SN	Item	Check	Reference
(i)	Whether register is updated?	Yes/No	ANNEXURE 8.1(a), Para 813(d) of IRWM
(ii)	Whether a separate page is allotted for each encroachment?	Yes/No	
(iii)	Whether land boundary diagram is prepared?	Yes/No	
(iv)	Whether missing boundary stones recorded?	Yes/No	
(v)	Whether missing stones are replaced?	Yes/No	

TMS

(i)	Check on land offset file in excel and verify sample boundary pillars at site from 'Reports(A-L) > Land Management > Land Offset File (Excel file)	Yes/No
(ii)	Whether land boundary diagram is prepared?	Yes/No
(iii)	Whether missing boundary stones recorded?	Yes/No
(iv)	Whether missing stones are replaced?	Yes/No

9. Creep Register

This register is maintained by and kept in the office of SSE(P.Way) of the section. A separate page is allotted for each kilometer of track to record creep in fish plated/SWR Track.

Physical Register

SN	Item	Check	Reference
(i)	Whether register is up dated?	Yes/No	Annexure 3/7 Para 321(4) of IRPWM
(ii)	Whether a separate page is allotted for each kilometer?	Yes/No	
(iii)	Whether proper entries are made in each column?	Yes/No	
(iv)	Whether excessive creep is adjusted and recorded with date?	Yes/No	

TMS

(i)	Check from 'Inspection Register' > choose LWR on type of asset	Yes/No
(ii)	Whether excessive creep is adjusted and recorded with date?	Yes/No

10. Gap Survey Register (in TMS)

(i)	Check from 'Reports(M-Z) > Misc. Register > Gap Survey	Yes/No
(ii)	Whether gap survey is done in the month of February regularly?	Yes/No
(iii)	Whether gaps requiring gap adjustments are adjusted?	Yes/No
(iv)	Whether gap survey is done in rising trend of temperature?	Yes/No

11. Sand Hump Register (in TMS)

(i)	Check from 'Inspection Register' > Select feature type – Sand Hump	Yes/No
(ii)	Whether adequate loose sand is available in sand hump?	Yes/No
(iii)	Whether depth of sand above rail level is mentioned?	Yes/No
(iv)	Whether any deficiency noted is complied?	Yes/No

12. Casual Renewal Register

This register is maintained by and kept in the office of SSE(P.Way) of the section. Record of piece-meal renewals is maintained allotting a separate page for each kilometer of track.

Physical Register

SN	Item	Check	Reference
(i)	Whether register is up dated?	Yes/No	Para 603, 655, 656(vii) of IRPWM
(ii)	Whether reason for replacement is mentioned?	Yes/No	
(iii)	Whether complete detail of whole section is recorded?	Yes/No	

TMS

(i)	Check from 'Report(A-L)' > Asset Register	Yes/No
(ii)	Check from wire book whether all blocks taken for rail renewal has been entered in TMS?	Yes/No

13. Corroded Rail Register

This register is maintained by and kept in the office of SSE(P.Way) of the section. One page is allotted for each kilometer of track or each running line in yard to check extent of corrosion in rail flange and web. This register is not available in TMS.

Physical Register

SN	Item	Check	Reference
(i)	Whether register is up dated?	Yes/No	Ann 6/5, para 613 of IRPWM
(ii)	Whether a separate page is allotted for each kilometer?	Yes/No	
(iii)	Whether corroded rails are being replaced regularly?	Yes/No	
(iv)	Whether action taken is recorded and checked by officers?	Yes/No	

14. Permanent Way/Track Diagram (in TMS)

(i)	Check from 'Report(M-Z) Track Diagram	Yes/No

15. Welding Register (in TMS)

(i)	Check from 'Report(A-L)' > Asset Register > AT Weld	Yes/No

16. Ultrasonic Flaw Detection (USFD) Testing Register (in TMS)

(i)	Check from 'Report(M-Z) > USFD > USFD due/Overdue	Yes/No
(ii)	Check monthly progress	Yes/No
(iii)	Check defect list	Yes/No

17. Rail / Weld Fracture Register (in TMS)

(i)	Check from 'Report(A-L) > Fracture > Fracture Analysis	Yes/No
(ii)	Check whether all fracture reports have remarks of SSE/P.Way/USFD	Yes/No
(iii)	Check whether all reports have photos	Yes/No

18. Glued Joints Register

Register is maintained by and kept in the office of the SSE(P.Way) of the section. In this register details of glued insulated joints and annual record of its maintenance and performance is kept. A separate page is used for each Glued Joint.

Physical Register

SN	Item	Check	Reference
(i)	Whether register is up dated?	Yes/No	Ann-G of Manual for Glued Insulated Rail Joints
(ii)	Whether a separate page is allotted for each glued joint?	Yes/No	
(iii)	Whether annual record of performance is mentioned?	Yes/No	
(iv)	Whether track structure mentioned along with ballast cushion?	Yes/No	

TMS

(i)	Check from 'Report(A-L)' > Asset Register > select feature type – Glued Joint	Yes/No

19. Tie Tamping Machine (TTM) Register (in TMS)

This register is maintained by and kept in the office of SSE(P.Way) of the section. Tamping record along with record of track parameters i.e. cross level and alignment before and after tamping is maintained in the register.

Physical Register

SN	Item	Check	Reference
(i)	Whether register is up dated?	Yes/No	-
(ii)	Whether track parameters are recorded before tamping?	Yes/No	-
(iii)	Whether track parameters are recorded after tamping?	Yes/No	-
(iv)	Whether quality of work is assessed and mentioned?	Yes/No	-

TMS

(i)	Check from 'Report(M-Z) > Track Machine	Yes/No

20. PCDO Register

PCDO register is maintained as per the latest instructions of divisional Head Quarter from time to time. This register is not available in TMS.

Physical Register

SN	Item	Check	Reference
(i)	Whether register is up dated?	Yes/No	-
(ii)	Whether assistance required is highlighted?	Yes/No	-
(iii)	Whether vacancy position is highlighted?	Yes/No	-

21. Inspection Notes of Higher Officials

This register is maintained by and kept in the office of SSE(P.Way) of the section. Inspection notes of higher officials and their compliance is recorded in this register.

Physical Register

SN	Item	Check	Reference
(i)	Whether register is up dated?	Yes/No	-
(ii)	Whether action taken is recorded against each item?	Yes/No	-
(iii)	Whether timely action is taken?	Yes/No	-
(iv)	Whether items pertaining to higher officials brought to their notice?	Yes/No	-

TMS

(i)	Check from 'Miscellaneous' > Inspection Notes	Yes/No
(ii)	Whether action taken is recorded against each item?	Yes/No
(iii)	Whether timely action is taken?	Yes/No
(iv)	Whether items pertaining to higher officials brought to their notice?	Yes/No

22. Rainfall Register

This register is maintained by and kept in the office of SSE(P.Way) of the section. Extent of rainfall, recorded at the nominated locations where rain gauges are kept, is recorded in this register.

Physical Register

SN	Item	Check	Reference
(i)	Whether register is up dated?	Yes/No	Para 656 of IRPWM
(ii)	Whether time and date of rain fall is properly mentioned?	Yes/No	

TMS

(i)	Check from 'Report(M-Z) > Miscellaneous Register > 5. Rainfall Register	Yes/No
(ii)	Whether date wise rainfall for all measuring stations is entered for previous month?	Yes/No

23. Points & Crossing Joint Inspection Register

This register is maintained jointly by SSE(P.Way) and SSE(S&T) of the section and it is kept in Station Master's office. Details of joint inspections carried out, along with compliances, is maintained in this register.

Physical Register

SN	Item	Check	Reference
(i)	Whether summary of inspection is recorded in register?	Yes/No	-
(ii)	Whether compliance of each shortcoming noticed is recorded?	Yes/No	-
(iii)	Whether inspection is being done in each quarter?	Yes/No	-
(iv)	Whether proper entry has been done in each column?	Yes/No	-

TMS

(i)	Check from 'Report(A-L) > Inspection > 4. Inspection Register > Choose Point and Crossings (Joint) in drop down menu for type of Register. Fill all the relevant information.	Yes/No
(ii)	Whether inspection is being done in each quarter?	Yes/No
(iii)	Whether proper entry has been done in each column?	Yes/No
(iv)	Whether action taken / compliance is recorded with date?	Yes/No

24. Material Under Trial (MUT) Register

This register is maintained by and kept in the office of SSE(P.Way) of the section. Complete record of Materials Under Trial (if any) in the section is maintained in this register.

Physical Register

SN	Item	Check	Reference
(i)	Whether any material is under trial in the section?	Yes/No	Para 661 of IRPWM
(ii)	Whether proper entries are made in corresponding columns?	Yes/No	
(iii)	Whether register is brought up-to-date?	Yes/No	

TMS

(i)	Check from 'Register (M-Z) >Material Under Trial	Yes/No
(ii)	Whether any material is under trial in the section?	Yes/No
(iii)	Whether proper entries are made in corresponding columns?	Yes/No
(iv)	Whether register is brought up-to-date?	Yes/No

25. Annual Temperature Record Register

This register is maintained by and kept in the office of SSE(P.Way) of the section.

Physical Register

SN	Item	Check	Reference
(i)	Whether register is up dated?	Yes/No	Para 334 of IRPWM
(ii)	Whether proper entries are made in corresponding columns?	Yes/No	

TMS

(i)	Check from 'Register (M-Z) > Miscellaneous Register > 7. Temperature Register	Yes/No
(ii)	Whether register is up dated?	Yes/No
(iii)	Whether proper entries are made in corresponding columns?	Yes/No

26. Assurance Register

Physical Register

SN	Item	Check	Reference
(i)	Whether assurance of having read all rules & guidelines has been recorded?	Yes/No	Para 819 of IRPWM

TMS

(i)	Check from 'Register (M-Z) > Miscellaneous Register > 10. Circular Viewed	Yes/No

Chapter - 4

Check List for Inspections of Open Line Organisation

(A) Permanent Way (Track)

1. Inspection of Track

Sl. No.	Item to be inspected	Remarks	Reference
1.	Whether condition of Rails is good? (a) Vertical wear of rail is within 13/8 mm (60/52 kg) (b) Lateral wear of rail is within- (i) 6/8 mm (A & B / C & D routes on straight track) (ii) 8/10 mm (A & B / C & D routes on curved track)	Yes/No	IRPWM Para-702
2.	Whether condition of Sleepers especially under rail seat is good and their spacing is correct? (60/65 cm c/c for 1660/ 1540 sleeper density)	Yes/No	IRPWM Para-209
3.	Whether all track fittings are complete and tightened ?	Yes/No	
4.	Whether ballast available is sufficient and properly boxed ?	Yes/No	
5.	Whether Cess is adequate and as per Standard Profile ?	Yes/No	
6.	Whether Joggling of old AT Welds done: (i) With far end bolts, where Service life of Rails in terms of total GMT is equal to or more than 50% of stipulated fatigue life (GMT) of the rail. (ii) With clamps or two far end bolts, where bank height is 5m or more. (iii) With clamps or two far end bolts on Important bridges, and such of the Major bridges where height of bank is 5.0m or more, all tunnels and their approaches (and up to 100m on either side). (iv) With clamps or two far end bolts on good AT Weld shall be provided on curves of 3 degree or sharper.	Yes/No Yes/No Yes/No Yes/No	IRPWM Para-307
7.	Whether the Engineering Indicators provided in the section are of Retro Reflective type and provided at proper height and distance from track ?	Yes/No	
8.	Whether Fouling Mark of standard size provided, at correct location	Yes/No	
9.	Whether Visibility Testing Object (V.T.O.) is provided in station yard	Yes/No	
10.	Whether Fog Signal Post (F.S.P) is provided in the section	Yes/No	
11.	Whether Oiling and Greasing of fishplate joints is being done as per annual schedule? (once in a year on a program basis (Oct-Feb)(on non-running line, can be extended to 2 years with the approval of PCE)	Yes/No	IRPWM Para 619(5)
12.	Whether there is any blowing/pumping joint?	Yes/No	
13.	Whether knowledge of staff regarding safety of track is up to the mark?	Yes/No	

Sl. No.	Item to be inspected	Remarks	Reference
14.	Whether proper protection is resorted to at track work sites as per prescribed norms?	Yes/No	IRPWM Para 806, 807,808
15.	Whether P.Way materials are properly stacked and is away from running track and marked (wherever required) ?	Yes/No	
16.	Is the Machine tamping overdue (in Mechanized maintained track)?	Yes/No	
17.	Whether "Locations needing Inspection" are being regulated by field official ?	Yes/No	
18.	Whether all field officials are entering their inspection notes/observations in Track Management System (TMS)?	Yes/No	
19.	Whether resources/work planning has been done with respect to "Location needing attention" as per TMS?	Yes/No	

2. Gang Inspection

Sl. No.	Item to be inspected	Remarks	Reference
1.	Whether gang is working under proper track protection?	Yes/No	IRPWM Para - 806, 807, 808
2.	Whether all the Trackmen are in uniform?	Yes/No	
3.	Whether Gang charts, Mates diary, attendance sheet are available with gang?	Yes/No	IRPWM Table 1A, 1B & Para 653
4.	Whether all equipment i.e. Gang tools, first aid box, Safety equipment are available and in working condition?	Yes/No	IRPWM Para 604 Ann. 6/1
	(In good condition /Not in good condition)		
4.1	Powrah (Spade)	Yes/No	
4.2	Crowbar	Yes/No	
4.3	Pan mortar	Yes/No	
4.4	Pick Beater	Yes/No	
4.5	Pick Axe	Yes/No	
4.6	Shovel	Yes/No	
4.7	Ballast Rake	Yes/No	
4.8	Bar Straightening	Yes/No	
4.9	Bar Claw	Yes/No	
4.10	Tommy Bar	Yes/No	
4.11	Wire Claw	Yes/No	
4.12	Punches	Yes/No	
4.13	Wire Basket	Yes/No	
4.14	Spanners	Yes/No	
4.15	Hammer	Yes/No	
4.16	Rail drilling Ratchet	Yes/No	
4.17	Track Bond Drill/ Drill Twist	Yes/No	
4.18	Chisel	Yes/No	
4.19	Rail hole chamfering kit	Yes/No	
4.20	Tools for Lubrication of ERCs	Yes/No	
4.21	ERC Extractor / Applicator	Yes/No	
4.22	Rail Tongues	Yes/No	
4.23	Rail Shunt-Cable (Jumper)	Yes/No	
4.24	Cutting Blowpipe	Yes/No	
4.25	De-stressing Roller	Yes/No	

Sl. No.	Item to be inspected	Remarks	Reference
4.26	Rail Roller	Yes/No	
4.27	Rammer	Yes/No	
4.28	Ballast Profile Template	Yes/No	
4.29	Hump Cord	Yes/No	
4.30	Wooden Mallet	Yes/No	
4.31	Hand Signal Flag	Yes/No	
4.32	Staff suitable for exhibition of red lamp or red flag	Yes/No	
4.33	Detonators	Yes/No	
4.34	Whistle thunderer	Yes/No	
4.35	Battery operated LED based Torch Light-cum Hand-Signal Lamp	Yes/No	
4.36	Safety Helmet	Yes/No	
4.37	Safety Jacket	Yes/No	
4.38	Safety Gloves	Yes/No	
4.39	Shoes	Yes/No	
4.40	First aid box	Yes/No	
4.41	Safety goggle	Yes/No	
5.	Whether previous day work is as per data entered in Gang chart/diary? Is it as per expected quality?	Yes/No	IRPWM Para 653
6.	Knowledge of Mate and Gang regarding safety and quantity of work is adequate?	Yes/No	IRPWM Para 114-119
7.	Whether PME of Mate, Keyman and Trackman is being done regularly as per norms? (On attaining the age of 45 years and thereafter at the termination of every period of five years)	Yes/No	IRPWM-1408 Ann.-14/3
8.	Whether compliance of various points noted during last inspection have been made?	Yes/No	
9.	Whether the "Program of Work" is being given regularly to the Gang by the sectional SSE/JE (P.Way)?	Yes/No	
10.	Whether work done by the Gang is being checked by the sectional SSE/JE (P.Way) in the Gang Diary and his observation are recorded in the Gang Diary ?	Yes/No	
11.	Is there any case any particular trackman being sent for outstation duty repeatedly or for long duration?	Yes/No	
12.	Whether muster sheet is being closed in time ?	Yes/No	
13.	Whether Gang Progress/work is being entered in TMS?	Yes/No	

3. Curve Inspection

Sl. No.	Item to be inspected	Remarks	Reference
1.	Whether proper Curve Board are provided at both ends of curve with details of degree, radius, Super Elevation (SE) etc.?	Yes/No	IRPWM Para 407(1)
2.	Whether marking of Station No., Versine and Super Elevation are indicated on rail and is legible? (10 m apart on inside of web of outer rail)	Yes/No	IRPWM Para 407(3)
3.	Shoulder width on outer rail on LWR track (350/500 mm shoulder ballast on straight and inside of curve/ outside of curve)	Yes/No	IRPWM Para 212
4.	Whether rail posts are available at Transition Tangent Point (TTP) and Common Tangent Point (CTP)?	Yes/No	IRPWM Para 407(2)

Sl. No.	Item to be inspected	Remarks	Reference
5.	Whether extra clearance for curves have been provided: 1. On platforms? Inner side of curve: 27330/R + 5L/4 – 51 mm Outside of curve: 29600/R – 25 mm 2. Adjacent Track: 27330/R+29600/R+2L/4 mm Where R is radius of curve in meter and L is Lean	Yes/No Yes/No	IRPWM Para 415 & Appendix of SOD
6.	Whether compliance of various points noted during last inspection have been made?	Yes/No	
7.	Whether the inspection of curve has been done as per schedule by ADEN/SSE(P.Way)/JE(P.Way)?	Yes/No	IRPWM Para 103, 106
8.	Whether Curve Inspections are being entered by SSE/P.Way in TMS	Yes/No	
9.	Does the curve require local /complete realignment? (20% or more stations are having Versines variations beyond limits as per speed band). <u>Permissible values of Station to station Versine variation</u>: 160 kmph and upto 110 kmph – 10mm (15 for 110kmph) or 20% of average Versines whichever is more. Below 110 kmph and upto 50 kmph - 20mm or 20% of average Versines whichever is more. Below 50 kmph – 40mm or 20% of average Versines whichever is more.	Yes/No	IRPWM Para 524
10.	Maximum Gauge on curve - Radius ≥ 440 m - -6 to +15 mm Radius < 440 m - upto +20 mm Twist (on 3 meter) - On straight & curved track other than transmission - 3.5 mm/m - On transition curve - 2.1 mm/m (local defect above designed value)	Yes/No	IRPWM Para 525(1)

4. <u>Points & Crossings</u>

Sl. No.	Item to be inspected	Remark	Reference
1.	Whether entries are recorded in Points & Crossing Register by SSE/JE as per their inspection schedule? Passenger & Running lines- Once in 3 months. Other lines & yards- Once in 6 months on rotation.	Yes/No	IRPWM Para 106
2.	Whether condition of stock rail and tongue rail of switch is damaged or worn out?		IRPWM Para 429(2)
	a. Tongue rail is chipped/cracked within 200mm length in 1000 mm from ATS	Yes/No	
	b. Vertical wear of Tongue rail is within 8/5mm at 13mm head width and level point (60/52 kg)	Yes/No	
	c. Lateral wear of tongue rail at Q point and Level point is within 8/6mm(60/52 kg)	Yes/No	
	d. Vertical wear of Stock rail is within 13/8mm (60/52 kg)	Yes/No	
	e. Lateral wear of Stock rail is within i. 6/8 mm (A & B/C & D routes on straight track) ii. 8/10 mm (A & B/C &D routes on curved track)	Yes/No	
3.	Whether tongue rails are out of square?	Yes/No	
4.	Whether tongue rail houses properly against stock rail?	Yes/No	
5.	Whether throw of switch is within tolerance limit ? (Straight switch- 95mm, Curved switch-115mm, Thick web switch-160mm)	Yes/No	SOD Ch.2 Item 16

Sl. No.	Item to be inspected	Remark	Reference
6.	Whether correct gauge and cross level is maintained at toe of switch in both the settings i.e., Normal and Reverse?	Yes/No	
7.	Whether all tongue rail fittings are intact and effective?	Yes/No	
8.	Whether correct gauge and cross level is maintained in lead portion?	Yes/No	
9.	Wear at Actual Nose of Crossing (ANC) is within the Permissible limits? (Rajdhani/Shatabdi route- Builtup Xing: 6mm, CMS Xing: 8mm; Other routes all xings: 10mm).	Yes/No	IRPWM Para 429(3)
10.	Whether proper clearance between vee and wing rail at nose of crossing is maintained? (44-48 mm in B/Up xings)	Yes/No	SOD Ch.2 Item 14 & 15
11.	Whether correct clearance of check rail opposite the crossing is maintained? (41-45 mm for Fan shaped T/out; 44-48 mm for other T/outs)	Yes/No	SOD Ch.2 Item 12 & 13
12.	Whether correct gauge and cross level is maintained at nose of crossing?	Yes/No	IRPWM Para 429(3)
13.	Whether proper packing is given in switch and crossing portion?	Yes/No	
14.	Whether length of turnout is standard or not?	Yes/No	
15.	Whether compliance of various points noted during last inspection have been made?	Yes/No	
16.	Is Machine tamping overdue?	Yes/No	
17.	Whether inspections are entered regularly in TMS as per laid down schedule?	Yes/No	

5. Insulated Joints (Conventional) and Glued Joints and Rail Joints

Sl. No.	Item to be inspected	Remark	Reference
1.	Whether condition of rails, sleepers and packing of Insulated Joints/Glued Joints is satisfactory?	Yes/No	
2.	Whether there is metal flow on the Insulated/Glued Joint rail ends?	Yes/No	
3.	Whether rails at joint are battered/hogged?	Yes/No	
4.	Whether drainage is good on the Insulated/Glued Joints?	Yes/No	
5.	Whether inspections are entered regularly in TMS?	Yes/No	

6. Deep Screening

Sl. No.	Item to be inspected	Remark	Reference
1.	Whether work is being done under competent supervisor?	Yes/No	IRPWM-1406
2.	Whether stipulated speed restrictions are imposed at work site and Engineering indicators have been planted at the correct locations?	Yes/No	IRPWM Para 637
3.	Whether level pegs are provided for initial/final rail level? (At every 10 M)	Yes/No	
4.	Whether screened muck is thrown away from running track?	Yes/No	
5.	Whether proper wooden blocks and other packing are used for passing the trains?	Yes/No	
6.	Whether Cess is cross-sloped and repaired?	Yes/No	
7.	Whether Deep screening is being entered in TMS?	Yes/No	

7. Lifting of Track

Sl. No.	Item to be inspected	Remark	Reference
1.	Whether SSE/J.E/P.Way is present at the site of lifting of track?	Yes/No	
2.	Whether proper speed restrictions are imposed at site?	Yes/No	
3.	Whether track protection is done at site?	Yes/No	IRPWM Para 806,807,808
4.	Whether level pegs are provided for finalizing the required level? (At every 30M)	Yes/No	
5.	Whether lifting is being done from down-hill end?	Yes/No	
6.	Whether lifting more than 50 mm is being practiced at site?	Yes/No	IRPWM Para 638
7.	Whether work done is being entered in TMS?	Yes/No	

8. Drainage in Station Yards/Block Sections

Sl. No.	Item to be inspected	Remark	Reference
1.	Whether all drains were cleaned before monsoon and its silt was taken away from track?	Yes/No	IRPWM Para 640-641
2.	Whether cleaning of shoulder ballast, and removal of vegetation/weeds has been ensured before monsoon?	Yes/No	
3.	Whether all side drains, catch water drains are intact and desilted before monsoon?	Yes/No	
4.	Whether work done has been entered in TMS?	Yes/No	
5.	Whether 1/3rd length of track has been overhauled annually	Yes/No	

9. Ballast Depot

Sl. No.	Item to be inspected	Remark	Reference
1.	Whether adequate level ground is available at specific ballast depot?	Yes/No	IRPWM Para 211,214
2.	Whether all testing equipment are available and in working order at depot laboratory?	Yes/No	IRS-GE-1 June-2016
3.	Whether all records including registers, challans are updated and intact?	Yes/No	
4.	Whether all qualitative and quantitative measures are being followed?	Yes/No	
5.	Whether a Whether adequate space is available between the stacks?	Yes/No	
6.	Whether loading/unloading facilities are adequate?	Yes/No	
7.	Whether Ground Levelling Certificate is being issued by ADEN, before starting stacking of any ballast stack ?	Yes/No	

10. Long Welded Rails (LWR)/Continuously Welded Rail (CWR) Inspection

Sl. No.	Item to be inspected	Remark	Reference
1.	Whether all inspections are done by SSE/JE as per laid down schedule and recorded in LWR register? (Fortnightly in 2 hottest & 2 coldest months individually by SSE/JE; once in 2 months by rotation by SSE/JE in other months)	Yes/No	IRPWM Table 1B, Para-106, 106 (4)(I), 109)
2.	Whether gaps of SEJ are within permissible limits? (should be within $\pm$ 10 mm from specified value)	Yes/No	IRPWM-338

Sl. No.	Item to be inspected	Remark	Reference
3.	Whether conditions of SEJ i.e. tongue rail, stock rail, sleepers & fittings are good?	Yes/No	
4.	Whether is there any cut in LWR, if any, Is speed restriction imposed? (30 kmph)	Yes/No	
5.	Whether destressing is done at stipulated periods, date and temperature are recorded on LWR board?	Yes/No	IRPWM 339-341
6.	Whether staff is aware about rules?	Yes/No	
7.	Whether Hot/Cold Weather Patrolling is being practiced at prescribed temperatures? (td+25 for Hot weather patrolling on LWR with PSC sleeper & density 1540 or more / td+20 for LWR in other cases; td-30 for Cold weather patrolling)	Yes/No	IRPWM-353
8.	Whether Hot Weather Patrolmen is equipped with all stipulated tools mentioned in IRPWM?	Yes/No	
9.	Whether the condition of sleepers is O.K?	Yes/No	
10.	Whether all fittings are available and tight?	Yes/No	
11.	Whether reference posts are available in central portion as well as breathing length of LWR/CWR?	Yes/No	
12.	Whether temperature record is being maintained on daily basis in SSE/P.Way office?	Yes/No	
13.	Whether LWR needs destressing?	Yes/No	
14.	Whether all inspections, work done and changes are being entered in TMS?	Yes/No	

11. Track Renewal Work

Sl. No.	Item to be inspected	Remark	Reference
1.	Whether work is being done as per approved plan, estimate, tender conditions, and location ?	Yes/No	
2.	Whether Railway Supervisor is available at site of work?	Yes/No	
3.	Whether requisite Speed Restriction is imposed at the worksite?	Yes/No	
4.	Whether track is adequately protected?	Yes/No	
5.	Whether all materials are kept ready before commencement of work?	Yes/No	
6.	Whether inventory of released material is being ensured?	Yes/No	
7.	Whether all track parameters are within permissible limits and are being recorded at the end of the day?	Yes/No	IRPWM Para 520(3)
8.	Whether there is any infringement of new/released material with running track?	Yes/No	
9.	Whether quality of laying is as per stipulated standards?	Yes/No	IRPWM Para-716
10.	Whether protection of new welds is being done until tested by USFD technology?	Yes/No	Para 8.10 of USFD Manual
11.	Whether all work done is being entered in TMS?	Yes/No	

(B) SSE/P.Way Office and Stores

Sl. No.	Item to be inspected	Remark	Reference
1.	Whether all requisite entries are being made in TMS?	Yes/No	Para-1302
2.	Whether all codes, manuals, circulars, inspections notes are available?	Yes/No	
3.	Whether Store and Office is neatly maintained?	Yes/No	
4.	Whether all Consumable and Perishable (C&P), Tools and Plants (T&P) are recorded in ledgers?	Yes/No	
5.	Whether disposal of scrap, including proper weighment is being ensured?	Yes/No	
6.	Whether submission of Material At Site (MAS) Returns, Revenue Returns, test check of stores being complied by SSE?	Yes/No	
7.	Whether Periodical Medical Examination (PME) of all Safety category staff/Supervisors are ensured by SSE?	Yes/No	IRPWM Para 1408
8.	Whether all service records, leave records etc. of staff are maintained properly and being updated regularly?	Yes/No	
9.	Whether all C&P and T&P available as per scale?	Yes/No	
10.	Whether proper water supply, electric supply and toilet facilities are available?	Yes/No	

(C) Check list for USFD testing

(Issued by RDSO. Vide Letter no. CT/Welding/Policy dt.28.10.14)

Date of Inspection: ……..

SECTION ..... DIVISION ..... KM/TP ..... LINE .....

Machine used for testing: Single Rail Tester / Double Rail Tester

Machine make and number:

Track Structure on test location:

SN	Item of Works	Observation/ Values Recorded
A.	**USFD Team**	
1.	Operator (s)	
(a)	Name	
(b)	Competency Certificate Details	Yes / No
(c)	Competency Certificate valid	Yes / No
2.	Adequate staff for handling / lifting of machines	Yes / No
B.	**USFD Machines & Condition**	
1.	Machine used is RDSO approved	Yes / No
2.	Availability of Requisite Tools & plants	Yes / No
i	Sensitivity block	Yes / No
ii	IIW block for calibration	Yes / No
iii	Standard Rail test piece	Yes / No
3.	Visual Condition of electronic unit	Proper / Not proper
4.	Visual condition of Trolley	Proper / Not proper
5.	Condition of Probes & shoes	Proper / Not proper
a	Right Hand Side	
i	0 degree	Proper / Not proper
ii	70 degree (F)	Proper / Not proper
iii	70 degree (B)	Proper / Not proper
b	Left Hand Side	
i	0 degree	Proper / Not proper
ii	70 degree (F)	Proper / Not proper
iii	70 degree (B)	Proper / Not proper
c	For Flange testing	
i	70 degree 2 MHz	Proper / Not proper
ii	70 degree 2 MHz (Side looking probe)	Proper / Not proper
iii	45 degree 2 MHz	Proper / Not proper
d	Alignment probes & Lifting System with respect to centre line	Central / eccentric
6.	Check on Characteristics of Machine	
a	Date of Check	
b	Whether due or not (Monthly check)	Due / Not Due
7.	Condition of Battery	Charged / Not Charged
8.	Condition of Audio Alarm	Sounding / Not Sounding

SN	Item of Works	Observation/ Values Recorded
9.	All Controls of electronic unit i.e. depth range, gain, reject etc. properly functioning	Yes / No
10.	Whether Watering arrangement for Probes is functional	Yes / No
11.	Availability of spares	
i	0, 4 MHz Double crystal Probes : 8No.	Yes / No
ii	0, 2 MHz Double crystal Probes : 8 No.	Yes / No
Iii	70 (F&B) probes, 2 MHz Single crystal : 8 No.	Yes / No
iv	45, 2 MHz Single crystal Probes : 2 No.	Yes / No
v	70, 2 MHz Single crystal Probes : 4 No.	Yes / No
vi	70, 2 MHz Single Crystal Probes (SLP) : 2 No	Yes / No
vii	0, 2/2.5 MHz Single crystal Probes : 2 No.	Yes / No
viii	Connecting Cable (Flaw detector with junction box.) : 6 No	Yes / No
ix	BNC Connector : 6 No.	Yes / No
x	IIW Block (as per IS : 1408) : 2 No.	Yes / No
xi	60x50x50 mm steel block (as per steel grade 45 C8 to IS : 1875-1992) : 1 No.	Yes / No
xii	Battery Charger : 1 No.	Yes / No
xiii	Fuse : 12 No.	Yes / No
xiv	Step gauge : 1 No.	Yes / No
C	**Check on sensitivity settings and Calibration setting**	
1.	Calibration Check	
a	Calibration for 300/200 mm longitudinal wave using 0, Double crystal Probe	Proper / Not Proper
b	165 mm Direct shear wave calibration for 70, 2 MHz Single crystal Probe	Proper / Not Proper
2.	Sensitivity setting of equipment and probes with help of standard rail piece	Proper / Not Proper
a	Whether gain is locked after setting	Yes / No
3.	Check on function & sensitivity of probes	
a	Normal Probe (Back wall echo adjusted to full screen height)	Proper / Not Proper
b	Angle probe 70 (Centre forward & backward) (Amplitude of 12 mm dia. hole to be set to 3 div. i.e. 60% of full screen height)	Proper / Not Proper
c	Gauge face & Non gauge face corner probe 70 (Forward & Backward) (Signal amplitude from 5 mm FBH to be set 60% of full height)	Proper / Not Proper
d	45 probe	Proper / Not Proper
4.	Whether adjustment in sensitivity setting was done for variation in rail temperature	Proper / Not Proper
5.	Whether gain has been increased by 10 db. for D Marked rails	Yes / No
6.	Check on equipment characteristic	
a	Linearity of time base of flaw detector	Proper / Not Proper

SN	Item of Works	Observation/ Values Recorded
b	Linearity of Amplification of flaw detector	Proper / Not Proper
c	Penetrative Power	Proper / Not Proper
d	Resolving Power	Proper / Not Proper
e	Probe index	Proper / Not Proper
f	Beam angle	Proper / Not Proper
7.	Whether scheduled maintenance of USFD machine was done	Yes / No
D.	**Check on Work**	
1.	Whether equipment is in proper working order duly calibrated	
a	Battery is fully charged	Yes / No
b	All controls of electronic unit properly functioning	Yes / No
c	Calibration & sensitivity setting done	Yes / No
d	Whether the gap between probing face and probe shoe is probe (0.2 mm)	Yes / No
e	Whether alignment of probes is proper	Yes / No
f	Adequate supply of water for coupling for all the probes is ensured	Yes / No
2.	Check on previous day's work	
(i)	Date of testing	
(ii)	Location of testing (From Km to Km)	
(iii)	Rail testing	
(a)	Whether all IMR defects confirmed	Yes / No
(b)	If No, number of additional defects	
(c)	Whether preventive action taken on all defects	Yes / No
(d)	Whether all OBS defects confirmed	Yes / No
(e)	If No, number of additional defects	
(f)	Over Reported	
(g)	Under Reported	
(iv)	Weld testing	
(a)	Type of Welds	
(b)	Whether all defects confirmed	
(c)	If No, number of additional defects	
(d)	Whether preventive action taken on all defects	Yes / No
(e)	Over Reported	
(f)	Under Reported	
(v)	Whether the A-scans of all defects preserved in machine	Yes / No
3.	Check on day's work	
(a)	Type of Testing	Rail / weld
(b)	The A-Scans of all defects being preserved	Yes / No
(c)	The defects details are properly logged in machine	Yes / No
(d)	Defects are properly entered in Register	Yes / No

SN	Item of Works	Observation/ Values Recorded
E.	**Schedule of USFD testing and adherence**	
1.	Date of last USFD Testing of Inspected Stretch	
(a)	Rail testing	
(b)	Weld testing	
2.	Stipulated frequency of section	
(a)	Rail testing	
(b)	Weld testing	
3.	Whether testing is done as per Schedule	Yes / No
4.	Proper up keep of defects register has been done	Yes / No
5.	Whether 'D' Marked Rails have been checked as per the revised frequencies, if as fixed by CTE	Yes/ No

(D) Check list for Inspection of AT Welding (New Weld)

(Issued by RDSO. Vide Letter No. CT/Welding/Policy dt.28.10.14)

Date of Inspection:
SECTION ..... DIVISION ..... KM/TP ..... LINE .....

Brief of Welding Technique:(Rail Section/UTS/Heating Technique/Mould/Tapping)

Sl. No.	Item of Works	Observation/ Values Recorded
A.	**Storage of Welding Material at Store**	
1.	AT Welding Portion	
(a)	Secured Building	Yes / No
(b)	Ventilation	Good / Poor
(c)	Dampness	Yes / No
(d)	Properly Packed	Yes / No
2.	Igniters	
(a)	Storage different from portion	Yes / No
(b)	Stored in locked steel cupboard	Yes / No
3.	Prefabricated Mould	
(a)	Dampness	Yes / No
(b)	Properly Packed / Neatly stacked	Yes / No
B.	**Preparatory Arrangements at Site**	
1.	Availability of complete T & P and consumables at site	
(A)	Preheating Equipment	
A-1	Air-Petrol Heating	
1.	Pressure Tank with Pressure gauges : 1 No.	Yes / No
2.	Vaporizers (Burner) complete : 1 No.	Yes / No
3.	Nozzle Pricker : 2 Nos.	Yes / No
4.	Nozzle Keys : 1 No.	Yes / No
5.	Vaporizer stand : 1 No.	Yes / No
6.	Goose neck attachment to vaporizers : 2 No.	Yes / No
A-2	Compressed Air - Petrol Pre-Heating	
1.	Compressor system with Pressure gauge : 1 No.	Yes / No
2.	Torch (Burner) complete: 2 No.	Yes / No
3.	Torch (Burner) Keys : 1 No.	Yes / No
4.	Torch (Burner) Stand : 2 No.	Yes / No
5.	Goose neck attachment to vaporizers : 2 No.	Yes / No
A-3	Oxy - LPG Pre-Heating	
1.	Oxy - LPG Torch (Burner) : 1 No.	Yes / No
2.	Oxygen Cylinder with Pressure gauge : 1 No.	Yes / No
3.	LPG Cylinder with Pressure gauge : 1 No.	Yes / No
4.	Torch (Burner) Stand : 1 No.	Yes / No
5.	Connecting Hose Pipe : 2 No.	Yes / No
(B)	Sufficient quantity of fuel (Petrol / LPG-Oxygen as required from authorized sources)	Yes / No (Indicate Source)
(C)	Crucible and accessories :	
1.	Crucible Complete : 1 No.	

Sl. No.	Item of Works	Observation/ Values Recorded
(a)	Crucible shell	Yes / No
(b)	Crucible Lining (Availability of Magnesite powder & sodium silicate)	
2.	Crucible cap : 1 No.	Yes / No
3.	Crucible forks : 1 No.	Yes / No
4.	Crucible stands : 1 No.	Yes / No
5.	Crucible rings : 1 No.	Yes / No
(D)	Abrasive Rail Cutter: 1 no.	
(E)	Mould fixing arrangement	
1.	Mould Pressure (Clamp) : 1 set	Yes / No
2.	Mould Shoes : 2 Pairs	Yes / No
(F)	Weld Trimmer with power pack: 1 No. (From Approved source)	Yes / No Indicate Source
(G)	Rail profile weld grinder: 1 No. (From Approved source)	Yes / No Indicate Source
(H)	Measuring Tools :	
1.	Straight Edge 1m long : 1 No.	Yes / No
2.	Straight Edge 10 cm long : 1 No.	Yes / No
3.	Gap gauge & Height Gauge : 1 No.	Yes / No
4.	Filler gauge : 1 No.	Yes / No
5.	Pyrometer / Thermal chalk / Infrared Thermometer for measurement of Rail Temperature : 1 No.	Yes/No
6.	Stop watch : 1 No.	Yes / No
(I)	Other tools / Equipment	
1.	Cleaning rod round : 1 No.	Yes / No
2.	Tapping rod : 1 No.	Yes / No
3.	Aluminum / steel rod for thermal plugging : 1 No,	Yes / No
4.	Leather washers for pump: 2 No.	Yes / No
5.	Tool for punch marking : 1 set	Yes / No
6.	Mirror 150*100mm with handle: 1 No.	Yes / No
7.	Wooden wedges for rail alignment: 12 No.	Yes / No
(J)	Tool box Containing following:	
1.	Hot Sets (Chisels): 2 No. (For Emergency use only)	Yes / No
2.	Rail file 350*40-6 mm: 2 No. (For Emergency use only)	Yes / No
3.	Funnel tin for pouring petrol: 1 No.	Yes / No
4.	Adjustable spanner: 1 No.	Yes / No
5.	Hammer 1 kg: 1 No.	Yes / No
6.	Sledge hammer double panel 5 kg: 2 No.	Yes / No
7.	Steel wire brush: 1 No.	Yes / No
8.	Blue goggles: 2 pairs	Yes / No
9.	Paint brush 50 mm: 1 No.	Yes / No
10.	Slag container (bowl): 1 No.	Yes / No
11.	Asbestos gloves: 2 pairs	Yes / No
12.	Hose clips: 4 No.	Yes / No
13.	Pliers: 1 No.	Yes / No
(K)	Insulation hood for control cooling (for HH rail, 110 UTS rail welding)	Yes / No Required / Not

Sl. No.	Item of Works	Observation/ Values Recorded
2.	Welding Technique used is proper as per extant provisions (Compressed Air/Oxy-LPG Heating, 3 piece mould & Auto Tapping Thimble for 52 kg 90 UTS rails and above)	Yes / No Indicate Technique being used
2.1	Technique is approved for the firm	Yes / No
3.	Welding Portion & consumable	
(a)	Portion as per Rail section /UTS to be welded & of proper	Yes / No
1.	Supplier / Firm	
2.	Batch No.	
3.	Portion No.	
4.	IC No.	
5.	Date of Manufacture	
6.	Results of Reaction test, if the portion is 2 years old	Required / Not Required
	Nature of Reaction	Normal / Boiling
7.	Condition of Packing	
(b)	Three Piece Mould	
1.	Condition of Mould	Damp/ Dry Cracked/ intact
2.	Condition of vents in Mould	
(c)	Proper quality looting sand, ignition etc. are properly inspected	Yes / No
(d)	Other consumables	Indicate Material & Condition
4.	Welding Team	
(a)	Whether full contingent of welding team is available at site	
(i)	Welder: 1 No.	Yes / No
(ii)	Skilled Artisan: 2 No.	Yes / No
(iii)	Helper Khalasi / Khalasi: 5 No.	Yes / No
(iv)	Track Man: As required for site protection.	Yes / No
(b)	Name of Welder	
	Details of competency certificate (certificate no. & validity)	
	Whether competency is for technique to be used & is valid	Yes / No
(c)	Name of supervisor	
	Details of competency certificate (certificate no. & validity)	
	Whether competency is for technique to be used & is valid	Yes / No
5.	Details of Rails being welded	
(a)	Section / UTS	
(b)	Old or new	
(c)	In case old Rails:	
1.	Anticipated balance service life	
2.	Rail is free from corrosion or excess wear.	Yes / No
3.	Result of USFD testing.	
4.	General Condition of rails	
5.	General Condition of Rail ends	
1.	Condition of Rail Ends	Hogged / Battered / Straight

Sl. No.	Item of Works	Observation/ Values Recorded
2.	Battering / Hogging in mm	
3.	End Bends of the rails in mm (Vertical : +0.5mm/ -0.0 mm Lateral : 0.5 mm)	Vertical : Lateral :
4.	End cuts are truly vertical	Yes / No
5.	Ends are cleaned by K-oil & wire brush	Yes / No
6.	Fish bolt holes have been eliminated	Yes/No
	If no. distance of fish bolt holes from rail and being welded	
C.	**Execution of Welds**	
1.	Traffic Block Time	
2.	Gap between rail in mm (25mm ±1for normal welds 50±1 and 75±1 for wide gap welds)	
3.	Alignment of rail with 1m straight edge	
a	Lateral (±0.5mm)	
b	Vertical (The joint shall be kept higher by : 3 to 4 mm for 72UTS and 2 to 2.4 mm for higher UTS)	
4.	Whether proper clear working space of 250 mm is available and fastening of 5 adjacent sleepers removed	Yes / No
5.	Proper Fixing of Prefabricated Mould	
(a)	Mould aligned Centrally	Yes / No
(b)	The gap between mould and rail packed firmly with luting sand	Yes / No
6.	Proper Fixing of Mould shoes: perfectly vertical, not skew	Yes / No
7.	Pressure in Preheating arrangement	
(a)	Air Petrol: Compressor tank Pressure (7±0.7 Kg/cm^2)	
(b)	Compressed Air Petrol: Air Pressure (0.2 to 0.3 Kg/cm2)	
(c)	Oxy - LPG Pre heating:	
(i)	Pressure for Oxygen Cylinder (7 to 8 Kg/cm^2)	
	Pressure for LPG Cylinder (2 to 2.5 Kg/cm^2)	
8.	Whether pre heating torch is properly placed	Yes / No
9.	Proper fixing of crucible	
9(a)	Whether the crucible has been repaired properly with no loose sand particles	Yes / No
10.	Specific check on AT welding portion before pouring in crucible	Dry / Wet
11.	Preheating time (in minutes)	
(a)	Air Petrol Heating (10 to 12 min.)	
(b)	Compressed air petrol (4 to 4.5 minutes)	
(c)	Oxy - LPG preheating (2 to 2.5 minutes)	
12.	Reaction of AT welding portion on ignition	Normal / Boiling violent
13.	Tapping time in seconds (Manual Tapping: (20±3) sec, Auto Tapping L As per approval)	
(a)	Tapping done at time	
14.	Mould waiting time (4-6 minutes for 25 mm weld, 12 minutes for 75 mm welds)	
(a)	Mould Removed at time	

Sl. No.	Item of Works	Observation/ Values Recorded
15.	Trimming of weld done by weld trimmer with alignment wedges in position	Yes / No
a.	Wedges was removed fastening re-fixed and sleeper spacing corrected	Yes / No
b.	Wedges removed at time	
16.	All the removed fastening re-fixed and sleeper spacing corrected	Yes / No
17.	Provision of wooden block below the weld for support before passing first train	Yes / No
18.	Removal of Risers & Runners	
(a)	Whether weld has completely cooled	Yes / No
(b)	Removed by knocking towards the rail	Yes / No
19.	First train was passed after 30 min of pouring weld metal and completion of weld trimming	Yes / No
(a)	First Train passed at time	
(b)	First train passed with speed restriction of	
20.	Grinding of Weld	
	Whether Grinding done with profile grinder or manually	Profile Grinder / Manual
	Grinding was done after how much time	
	Grinding of location as required	Yes / No
D.	**Inspection of Weld**	
1.	Visual Inspection	Satisfactory / Not satisfactory
2.	Tolerances of finished weld	
(a)	Vertical (with 1m straight edge) (Variation not more than +1mm/-0.0 mm)	
(b)	Lateral (with 1m straight edge) (Variation not more than ±0.5mm)	
(c)	Finished of top surface at the end of 10cm straight edge (+0.4 mm /-0.0mm)	
(d)	Finished on sides of rail head at the centre of 10cm straight edge (±0.3mm)	
3.	Numbering of Weld	
(a)	Serial number of Weld	
(b)	Marking on weld done on NGF side as per provisions	Yes / No
4.	Whether USFD testing of weld was done	Yes / No
(a)	If yes, result of USFD testing	
	Action Plan for Re-welding in case the weld found defective	
(b)	If no, necessary precautions taken at site (Protection of weld by joggled fish plates)	
5.	Whether painting of thermit weld done or not	Yes / No
6.	Whether details of weld were properly entered in weld Register	Yes / No
E.	**Miscellaneous Items**	
1.	Whether sample test joint are due to be made for testing. (One out of 100 joints to be tested for Load deflection, Hardness & porosity tests)	
(a)	If, yes Indicate details viz. Joint No. etc.	

Sl. No.	Item of Works	Observation/ Values Recorded
(b)	Action Taken for testing of sample joints	
2.	In case of contractual welding	
2.1	Contract Details	
(a)	Name of firm	
(b)	CA No.	
(c)	Validity of contract	
2.2	Total number of welds done so far	
2.3	Details of USFD Testing	
(a)	Total no. of weld found defective in USFD Testing	
(b)	Total no. of welds failed in service during guarantee period	
(c)	Total Percentage of defective Welds	
(d)	The % of defective weld is within the permissible range	
2.4	Load Deflection Test, Hardness & Porosity test	
(a)	Total No. of samples Required to be tested @ 1 sample per 100 welds	
(b)	No. of test weld tested in Load deflection, hardness & porosity test	
(c)	Test Weld Samples results satisfactory	Yes / No
(d)	Action taken in case of unsatisfactory results	
3.	Proper Maintenance of Weld Register	Yes / No

(E) INSPECTION OF LEVEL CROSSING

1. MANNED LEVEL CROSSING

S. N.	Item to be inspected	Remark	Reference
1	Is the number of the Level Crossing (LC) mentioned at the LC Gate?	Yes/No	
2	Is Class of the gate mentioned on the gate?	Yes/No	
3	Whether Traffic/Engineering is written on the gate?	Yes/No	IRPWM PARA 909
4	Whether no. of G.K. sanctioned is written on the gate?	Yes/No	
5	Whether lifting barrier is provided or not?	Yes/No	IRPWM Annexure 9/1
6	Whether the focusing of gate lamps is all right, when observed from an adequate distance from the middle of the road?	Yes/No	IRPWM Annexure 9/1
7	Whether sufficient quantity of kerosene oil, wicks and match boxes are available at the gate?	Yes/No	IRPWM Para 910
8	Whether the gateman is on duty as per duty roster or not?	Yes/No	
9	Whether height gauge is provided at the level crossing (in electrified sections)?	Yes/No	IRPWM Para 910(5)
10	Whether the knowledge of gate man is up to the mark?	Yes/No	
11	Whether in the electrified section, the clearance between the height gauge and the road surface is as per stipulation? (4.67M)	Yes/No	
12	Whether the condition of gate and its locking arrangements are all right?	Yes/No	
13	Whether cross levels/gauge are in order?	Yes/No	
14	Whether adequate ballast cushion is available at the gate?	Yes/No	
15	Whether interlocking as per Train Vehicle Units (TVU) criteria are carried out or not? (Special, A and B1 class)	Yes/No	
16	Are the whistle boards corroded?	Yes/No	
17	Whether the condition of the drainage is all right at the gate?	Yes/No	
18	Whether the station working rule book is available in Hindi?	Yes/No	
19	Whether a ramp has been provided at both ends of the road?	Yes/No	
20	Whether the gate man has undergone medical checkup? (At the termination of every period of four years, calculated from the date of appointment, until they attain the age of 45 years, and then every two years until the age of 55 years and then there after annually, until the conclusion of their service.)	Yes/No	
21	Whether safety banners and other related items have been displayed at the gate?	Yes/No	
22	Has the gate man undergone the refresher course as per periodicity? (Every 5 years)	Yes/No	
23	Is the condition of the approach road good?	Yes/No	
24	Does the gate man have extra chains in case of failure of the gate barrier for immediate and prompt action?	Yes/No	
25	Whether gate working Rules are available at Gate?	Yes/No	
26	Whether gate working rules are as per provision of Station working rules?	Yes/No	

S. N.	Item to be inspected	Remark	Reference
27	Are Safety equipment such as hand signal lamp, hand signal detonators, pad locks and safety chains available at LC gate as per equipment list provided on the gate?	Yes/No	
28	Is the gate man fully acquainted with the use of the equipment?	Yes/No	
29	Whether overhauling of the gate has been done and is not overdue? (With every cycle of Machine packing or more frequent in no case more than 2 years)	Yes/No	
30	Whether night inspections are being carried out regularly?	Yes/No	
31	Whether the TVU data is updated as per three years schedule? Is census cum job analysis done?	Yes/No	IRPWM 917
32	Whether the speed breakers are provided on both sides of the road? (20m from gate post)	Yes/No	IRPWM 916
33	Is the revolving unit of the lifting barrier in working order?	Yes/No	
34	Is the communication to the gate proper by means of telephone?	Yes/No	
35	Whether Station Master is responding to rings from the gate?	Yes/No	
36	Whether private number are being recorded correctly at gate?	Yes/No	
37	Has a hand pump for drinking water provided at the site?	Yes/No	
38	Whether fencing has been provided along the track, at the level crossing gate? (15 Meters)	Yes/No	
39	Has the cleaning of the check rails being done properly at the gate?	Yes/No	
40	Whether Check rail clearance is in order? (Clearance 51–57mm. Clear depth-38mm)	Yes/No	SOD Ch. I item 5 &6
41	Are the road signs on the approaches properly maintained?	Yes/No	
42	Whether the protection diagram has been exhibited at gate?	Yes/No	
43	Whether detonators are available at LC Gate in adequate numbers with valid date? Validity 5 years and extended up to 8 years.	Yes/No	G&SR
44	Whether competency certificate of the gate man is current and valid? (Once in 3 years)	Yes/No	
45	Whether condition of check rail, check rail blocks proper or not?	Yes/No	
46	Whether adequate ballast cushion is available below sleeper or not?	Yes/No	
47	Whether proper bend/flair in check rails end portion has been provided?	Yes/No	
48	Whether extra shoulder ballast has been provided in the approaches of level crossing track to arrest the extra stress in rails during extreme hot weather?	Yes/No	
49	Whether painting and fitting of rails and check rails has been done? (Along with over hauling)	Yes/No	
50	Whether adequate longitudinal slope has been given in the approach road of level crossing?	Yes/No	
51	Whether adequate width has been provided on the road in the approaches, as well as on the track portion i.e. as per class of road?	Yes/No	
52	Are the W/L boards provided at adequate distance? (600 M)	Yes/No	

S. N.	Item to be inspected	Remark	Reference
53	Is the gate lodge as per standard of the type plan?	Yes/No	
54	Whether the wall clock is in working condition?	Yes/No	
55	Have the Safety posters been displayed?	Yes/No	
56	Whether the train time tables have been displayed at the gate lodge?	Yes/No	
57	Whether the inspection book of level crossings is available at the gate?	Yes/No	
58	Whether the complaint book is available at the gate?	Yes/No	
59	Whether level crossing registers are available at the gate?	Yes/No	
60	Whether the gate booms/gate leaves are properly functioning?	Yes/No	
61	Whether the gate man is aware of the safety rules in case of emergency?	Yes/No	

2. UNMANNED LEVEL CROSSINGS

S. N.	Item to be inspected	Remark	Reference
1	Is the number of LC mentioned at LC Gate?	Yes/No	
2	Is the type of gate mentioned on the gate?	Yes/No	
3	Whether the road surface is well maintained between gate posts and approaches as regards level & gradient? (The uneven or broken surface of road should be leveled as early as possible. And patch work should be done immediately, so that the road surface can be made leveled and smooth. Hexagonal concrete blocks may be provided, which are durable against wear and tear in gauge conversion and new construction. It has been proved more useful and durable for maintaining the road surface. Secondly it gives better appearance to the road surface and having high resisting power during monsoon season. It should be provided in between the two gates. Outside the gate road surface can be maintained by black top road. Hence it is easy to maintain and easy to prepare a smooth road surface quickly. Road surface is made smooth in such a way that vehicles are not struck to the track)	Yes/No	IRPWM Annexure 9/1
4	Are the road signs on the approaches properly maintained? (Generally indicators and warning boards get faded with time when ordinary paint is used. Hence as for as possible luminous paints / luminous strips should be used. As far as luminous strip and luminous paint are concerned, for speed breakers sign boards, whistle boards and stop boards etc. the luminous strip are more effective rather than luminous paint as it is just a like a pre-cast concrete which cannot be deteriorated immediately)	Yes/No	IRPWM Annexure 9/1
5	Whether check rail clearance is in order? (Clearance 51–57mm. Clear depth-38mm)	Yes/No	SOD Ch. I item 5 & 6
6	Whether track gauge and Cross-Level are in order?	Yes/No	
7	Whether W/L board provided on both sides of the gate at a proper location, at a distance of 600 m from level crossings on either side of the road?	Yes/No	
8	Whether the condition of the approach track of level crossings is in good condition?	Yes/No	
9	Whether visibility requirement for road users of 600m along the track from 5 M from nearest track center.	Yes/No	
10	Whether road users are taking precautions of stopping on the whistle of the train?	Yes/No	
11	Whether stop board is provided on the both ends of the road approaching in case of unmanned gate? (5 M from center line of nearest track)	Yes/No	IRPWM 916(2)
12	Whether speed breakers are provided on both sides of the road? 20 M from gate post	Yes/No	CS No. 128 of IRPWM
13	Whether warning boards have been provided at the proper location?	Yes/No	
14	Is the census being carried out regularly after three years?	Yes/No	

(F) Inspection for Tamping Site

(3X/CSM/Duomatic/UNIMAT) (IRTMM, Para 224(2)

S. N.	Items to be Checked	Remarks	Reference
1	a) Machine Type (CSM/Duomatic/Unimat)		Railway Board Letter No. 98/ Track-III/ TK/27-Pt dated 20.05.2003
	b) Machine No.		
	c) Base station/Division		
	d) Manufacturer		
	e) Year of manufacturing		
	f) Last major Maintenance schedule (POH/IOH)	POH/IOH	
	g) Next POH/IOH due on	POH_____ IOH_____	
	h) Month/Year of last IOH/POH		
	i) Depot of last POH/IOH		
	j) Rated output of the machine (No. of Sleepers/Hour)		
	k) Name of SSE/TM/In-charge		
	l) Name/designation of the operator		
2	Is any of tamping tools missing or worn-out? (Wear to be < 20% of cross sectional area)	Yes/No	Para 206(6) (IRTMM)
3	Is the Condition of tamping tools Satisfactory and fitting tight?	Yes/No	
4	Is the condition of lifting rollers satisfactory?	Yes/No	
5	Is the condition of lifting hooks (UNIMAT) satisfactory?	Yes/No	
6	Availability of Camping coach	Yes/No	Para 810 (IRTMM)
7	Is condition of the Camping Coach satisfactory?	Yes/No	
8	Are all safety equipment as per list annexed available ?		Para 704 (IRTMM)
9	Has it been ensured that stabling siding for machine's coaches is having adequate water supply, power supply & resting facility?		
10	**Pre-tamping Inspection**		
	i) Location of inspection KM Line Block Section Route Division		IRTMM Para 224 (3)
	ii) Availability of Clean Cushion (minimum 150 mm)	Yes/No	
	iii) Month & Year of Last Deep Screening		-
	iv) Is condition of Track drainage satisfactory, pumping locations attended & rounded ballast replaced with clean angular ballast?	Yes/No	
	v) Is condition of cess satisfactory and low cess made-up?	Yes/No	
	vi) Whether sleepers' spacing is uniform?	Yes/No Spacing = cm	
	vii) Are fittings in good Condition and tightened?	Yes/No	
	viii) Has all missing/broken fittings been replaced?	Yes/No	

S. N.	Items to be Checked	Remarks	Reference
	ix) Is Condition of sleepers satisfactory?	Yes/No	
	x) Has all Damaged/broken sleepers been replaced?	Yes/No	
	xi) Are the sleepers square?	Yes/No	
	xii) Has attention to hogged/battered joints been given?	Yes/No	Para 224 (2) (IRTMM)
	xiii) Was Pre-tamping survey done?	Yes/No	
	xiv) Is the solutions for Realignment of curves with interpolation of slews for feeding (with correction values, as applicable) Available?	Yes/No	
	xv) Are the beginning and end of circular and transitions of curves marked on sleepers?	Yes/No	
	xvi) Is the plotting of existing profile after pre-survey done and working sheet for lift values and interpolation for feeding (with correction values, as applicable) prepared?	Yes/No	
	xvii) Are the reference markings along the track available?	Yes/No	
	xviii) Has slew values, lift values and SE values written on sleepers?	Yes/No	
	xix) Is ballast heaped in tamping zone?	Yes/No	
	xx) Are the level crossing road surface opened for tamping?	Yes/No	
	xxi) Are the check rails on level crossings removed for tamping?	Yes/No	
	xxii) Are the guard rails on bridge approaches removed?	Yes/No	
	xxiii) Is the Removal/marking of obstructions such as rail lubricators, signal rods, cable pipes, glued joints etc. done?	Yes/No	
	xxiv) Are the marking of OHE bonds/ removal done (in electrified sections) done?	Yes/No	
	xxv) Are the joggled fishplates, wooden blocks etc. removed?	Yes/No	
	xxvi) Is the sufficient lighting at work site arranged for working during night?	Yes/No	
	xxvii) Has the availability of OHE staff been ensured, as required?	Yes/No	
	xxviii) Has adjustment of gaps in joints/ creep adjustment been done?	Yes/No	
	xxix) UNIMAT Working		
	a) Turnout No.		
	b) Station		
	c) Angle of crossing		
	d) LH / RH		
	e) When was it last tamped? (Month / Year)		
	f) Is the layout including spacing of sleepers as per relevant drawing?	Yes/No	
	g) Is the battered or worn out Crossing attended? (Reconditioning/ Replacement)	Yes/ No	
	h) Are the S&T gears, likely to infringe during tamping, cleared?	Yes/ No	

S. N.	Items to be Checked	Remarks	Reference
	LWR		
	i) Destressing temperature of LWR		
	ii) Last distressing date		
	iii) Is the temporary de-stressing done at higher/lower temperature?	Yes/ No Temp t_d= °C	
	iv) Likelihood of temperature exceeding t_d+20°C	Yes/ No	
9	Section of work		
	i) Division		
	ii) ADEN		
	iii) SSE Section		
10	Section of work / Traffic block		
	i) Block section and lines blocked		
	ii) Timing and total Duration (min)		
	iii) Travel time to work spot (min)		
	iv) Actual working time (min)		
	v) Travel time to clear block (min)		
	vi) Total ineffective time (min) (Max ineffective time = 0.45 Hrs.)		Railway Board Letter No. 98 / Track-III/ Tk/27-Pt dated 20-05-2003
11	**Operations During Tamping (as per Para 3.1.3 of IRTMM)**		
	i) Has the protection of the site of work and adjoining track done as per G&SR?	Yes/No	Para 224 (4) (IRTMM)
	ii) Working alignment (Straight/curve)		
	iii) Degree & Length of curve	Degree = Length = m	
	iv) Is there any of Points & Crossings present in planned stretch for tamping?	Yes/No	
	v) Are there points and crossing being tamped in same block ?	Yes/No	
	vi) Is the Lining being done in Design mode?	Yes/No	
	vii) Lining Working Method adopted (3/4 point)		-
	viii) Is the Levelling being done in Precision mode?	Yes/No	-
	ix) Has the Setting of tamping depth been done as per track structure? The gap between top edge of the tamping blade and the bottom edge of the sleeper in closed position of the tamping tool should be adjusted depending upon the type of rail and sleepers. (For Metal sleeper: 22-25 mm, for Flat bottom sleeper : 10-12 mm)	Yes/No	Para 206 (2) (IRTMM)

S. N.	Items to be Checked	Remarks	Reference
	x) Is the Squeezing pressure of tamping unit correctly set? a) PSC sleepers (110-120 kg/cm^2), b) ST, Wooden sleepers (100-110 kg/cm^2), c) CST-9 sleepers (90-100 kg/cm^2)	Yes/No	Para 206 (1) (IRTMM)
	xi) Minimum Slew Value (mm)	mm	-
	xii) Maximum Slew Value (mm) (Not more than 50 mm)	mm	
	xiii) Maximum lift value (mm) (Not more than 50 mm)	mm	Para 220 (2) IRTMM
	xiv) Has it been ensured that a minimum 10-20 mm general lift is given at high point? For curves – General lift when existing SE is less than equilibrium SE then Track irregularity (datum rail (inner) + 10 mm) when existing SE is more than equilibrium then only track irregularity.	Yes/No	Para 220 (1&3) (IRTMM)
	xv) Is no. of insertion commensurate with lift? (Total Lift) (up to 30mm lift – single insertion, 30mm to 50mm – two insertions) If more than 50 mm then two passes of tamping to be done	Yes/No	Para 220 (2) and 220 (3) (IRTMM)
	xvi) Is the Squeezing time set correctly? (0.8 to 1.2 sec)	Yes/No	Para 206 (5) (IRTMM)
	xvii) Are the feeding of correction values on transitions of curves (V_m/F) being done?(In 4 point system of lining only)	Yes/No	
	xviii) Is the feeding of SE values done as per feeding location?	Yes/No	
	xix) Is the Correction of SE, (K) being done?	Yes/No	
	xx) Is the feeding of 'X' correction for vertical curve being done?	Yes/No	
	xxi) Is the Ramping of 1 in 1000 given before closing the day's work and obligatory points being done? (The next day's work shall begin from the point of commencement of previous day's ramp)	Yes/No	Para 221 (IRTMM)
	xxii) Are the parameters of tamped track checked after tamping?	Yes/No	
	xxiii) Unimat working (Para 3.2.2 of IRTMM)		
	a) Length of approaches covered along with turnout (m)	m	
	b) Direction of tamping (Switch -> Crossing)	Yes/No	-
	c) Is the Sequence of tamping is first on main line than on turnout side? (ML -> LL)	Yes/No	
	d) Is the turnout side rail supported after lifting on mainline?	Yes/No	
	e) Has the Squeezing pressure been set correctly? (i) ST/wooden sleepers : 110-115 kg/cm^2 (ii) PSC sleepers: 135-140 kg/cm^2	Yes/No	Para 206 (1) (IRTMM)
	f) Has it been ensured that a minimum of 10 mm general lift is given at high points in the turnout?	Yes/No	
	g) Has the turn in curve been tamped along with turnout?	Yes/No	
12	**Post Tamping Operations** i) Location of inspection KM Line Block Section Route Division		
	ii) Has all loose fittings been tightened?	Yes/No	
	iii) Has all broken fittings been replaced?	Yes/No	

S. N.	Items to be Checked	Remarks	Reference
	iv) Has the ballast been dressed neatly?	Yes/No	
	v) Has the ballast between the sleepers and on shoulders been consolidated?	Yes/No	
	vi) Has all track parameters been recorded with the help of recorders provided in the tamping machine?	Yes/No	Para 224 (5) (IRTMM)
	vii) Whether Value of Track Parameter recorded satisfies IRTMM provisions?		Para 224 (5) (IRTMM)
	Alignment: a) Not more than 10 peaks exceeding +/- 4mm b) Any peak not more than +/- 6mm	Yes/ No	
	Cross level not more than 10 peaks exceeding +/- 6mm	Yes/ No	
	Unevenness: a) Not more than 10 peaks exceeding 6mm b) Any peak not more than 10mm		
	viii) Has all check rails/guard rails been re-fixed?	Yes/No	
	ix) UNIMAT working – Has all S&T/Electrical connections been Restored?	Yes/No	
13	Has it been ensured that adequate ballast is trained out for complete ballast profile as per IRPWM and profiling done?	Yes/No	Para 212 (IRPWM)
14	Is the actual Output of the machine matches with rated Progress of the Machine? Duomatic – CSM - 1.2 Km/effective block hour CSM - 3X - 1.6 Km/effective block hour UNIMAT - 75/90 min for each turnout	Yes/No	Railway Board Letter No.98/Track-III/Tk/27-Pt dated 20-05-2003
15	Any other specific Observation (not covered above):		

Safety Equipment (Para 704 of IRTMM)

S. N.	Description	Quantity
1	Detonators in a tin case	1 Box
2	H.S. flag red	2 Nos.
3	H.S. flag green	1 Nos.
4	H.S. Tri colour lamps	2 Nos.
5	Chain & Padlock	1 Set
6	Clamp with Padlock	2 Nos.
7	10 t jack (CSM / UNIMAT)	1 No.
8	20 t jack (Tamping Express)	1 No.
9	Crow bars	4 Nos.
10	Wooden blocks off sizes	8 Nos.
11	Gauge cum level	1 No.
12	Rail thermometer (dial type)	1 No.
13	Banner flag	2 Nos.
14	Portable Control Phone	1 No.
15	Walky Talky	2 Nos.
16	First Aid Box	1 No.
17	Skids	2 Nos.
18	Working time table of section where machine working	1 Copy
19	G&SR book with upto date amendment slips	1 Copy
20	4 Cell Flasher Light / LED Torch, 6 Watt	1 No.
21	LED Petromax / Led Lamps	1 No.
22	Safety Helmets	Machine Staff
23	Protective Clothing, Safety Shoes and Safety Gloves	Machine Staff
24	Track Machine Manual	1 No.
25	Accident Manual	1 No.
26	Fire Extinguisher	1 No.
27	Hooter (Manual / Remote)	2 Nos.
28	Hydraulic Hand Pump	1 No.
29	Emergency pneumatic/Hydraulic hose of sizes suiting to different machines(complete with end fittings)	1 No.

(G) Inspection of Ballast Screening Site (BCM Working)

S. N.	Narration	Observations	Reference
1	a) Machine Type (BCM/SBCM)		
	b) Machine No.		
	c) Base station/Division		
	d) Manufacturer		
	e) Year of manufacturing		
	f) Last major Maintenance schedule (POH/IOH)	POH/IOH	
	g) Month/Year of last IOH/POH		
	h) Rated output of the machine (m/Hour)		
	i) Name of SSE/TM/In-charge		
	j) Name/designation of the operator		
2	Availability of Camping coach?	Yes/No	
3	Is condition of the Camping Coach satisfactory?	Yes/No	
4	Has it been ensured that stabling siding for machine's coaches is having adequate requisite facilities?	Yes/No	Para 7.2 (i) (IRTMM)
5	Has it been ensured that OHE Block is taken or OHE is disconnected for maintenance of BCM in stabling siding?	Yes/No	Para 7.2 (vi) (IRTMM)
6	Has it been ensured that the gas cutting equipments is available on the machine?	Yes/No	Para 3.3.2 (xi) (IRTMM)
	Preliminary Works		
7	Location of inspection		-
8	Availability of Clean Cushion	Yes/No Clean Cushion = mm	-
9	Month & Year of Last Deep Screening		-
10	Has all preliminary works including survey, marking the longitudinal levels for lifting and proper cross fall to avoid formation of water traps etc. been ensured?	Yes/No	Para 3.3.2 (IRTMM)
11	Has it been ensured that adequate ballast is available on track for requisite cushion and to avoid ballast deficiency immediately after screening?	Yes/No	-
12	Has it been ensured that adequate ballast is available on cess/depot for supplementing the ballast for complete profile as per IRPWM?	Yes/No	Para 3.3.4 (iii) (IRTMM)
13	Are Sleeper fittings in good Condition and tightened?	Yes/No	Para 3.3.2 (x) (IRTMM)
14	Has all missing/broken fittings and Damaged/broken sleepers been replaced?	Yes/No	Para 3.3.2 (x) (IRTMM)
15	Has it been ensured that entire ballast beyond the reach of cutter chain is transferred in its cutting width?	Yes/No	Para 3.3.2 (iv) (IRTMM)
16	Has it been ensured that a trench of 300mm depth & 1 meter width is prepared lowering of cutter bar in advance? In case of screening of turnout, whether requisite trench for installation of extension pieces on right side is prepared?	Yes/No	Para 3.3.2 (xiii) (IRTMM)

S. N.	Narration	Observations	Reference
17	Has it been ensured that proper lighting arrangement are made for night working on machine and/or OHE Mast?	Yes/No	Para 5.3.5 (viii) (IRTMM)
18	Has it been ensured that there is no obstruction in the width of 4100mm to avoid infringement to cutter chain?	Yes/No	Para 3.3.2 (v) (IRTMM)
19	Has it been ensured that L-Xing should be opened in advance so as to enable machine to work?	Yes/No	Para 3.3.2 (ix) (IRTMM)
20	Has it been ensured that in OHE section distance of mast foundation from track centre is accurately measured and checked for free movement of cutting chain?	Yes/No	Para 3.3.2 (vi) (IRTMM)
21	Has it been ensured that approaches to bridges which cannot be screened by the machine screened manually in advance of the machine working?	Yes/No	Para 3.3.2 (viii) (IRTMM)
22	Has it been ensured that all the obstruction i.e., rail pegs, broken PRCs, foundation etc. are removed in advance?	Yes/No	Para 3.3.2 (v) (IRTMM)
23	Has it been ensured that Tamping machine is available while doing deep screening by BCM?	Yes/No	-
24	Are all safety equipment as per list annexed available?	Yes/No	Checklist issued by RDSO
25	LWR		
	i) Destressing temperature of LWR		
	ii) Last distressing date		
	iii) Is the temporary de-stressing done at higher/lower temperature?	Yes/No Temp t_d= °C	Para 3.1.2(x) (IRTMM)
	iv) Likelihood of temperature exceeding td+20°C	Yes/No	Para 6.2.1 (i)(a) (LWR Manual)
	During Working of BCM		
26	Location of work		
	i) Division		
	ii) ADEN		
	iii) SSE Section		
27	Traffic block		
	i) Block section and lines blocked		
	ii) Timing and total Duration (min)		
	iii) Travel time to work spot (min)		
	iv) Actual working time (min)		
	v) Travel time to clear block (min)		
	vi) Total ineffective time (min) (Max ineffective time = 60 min)		Rly. Bd. Letter No.98/Track-III/Tk/27-Pt dated 20-05-2003
28	i) Has it been ensured that proper protection of worksite done with banner flag & detonators during block to follow the lookout caution on adjacent line?	Yes/No	Para 4.6.1 (IRTMM)
	ii) Whether speed restriction on adjacent track has been imposed while block working?	Yes/No	

S. N.	Narration	Observations	Reference
29	Has it been ensured that hooter in working condition is available at the BCM site and everybody is sensitized to ensure safety?	Yes/No	Para 4.6.8 (i) (IRTMM)
30	Has it been ensured that cutter chain is not cutting/disturbing the formation and necessary lifting of track done as required?	Yes/No	-
31	Are the S&T gears likely to infringe cleared in case of Turnouts?	Yes/No	Para 3.3.2 (v) (IRTMM)
32	Is the availability of S&T / Electrical Staff ensured? (If required)	Yes/No	Para 3.3.2 (v) (IRTMM)
33	Is the Ramping of 1 in 1000 given before closing the day's work and obligatory points being done?	Yes/No	Para 3.1.3 (vi) (IRTMM)
	Post BCM Working		
34	Has all loose fittings been tightened?	Yes/No	Para 3.1.4 (i) (IRTMM)
35	Has all broken fittings been replaced?	Yes/No	Para 3.1.4 (ii) (IRTMM)
36	Has all check rails/guard rails been re-fixed?	Yes/No	-
37	Has it been ensured that adequate ballast is trained out for complete ballast profile as per IRPWM and profiling done?	Yes/No	Para 3.3.4 (iii) (IRTMM)
38	UNIMAT working – Has all S&T/Electrical connections been Restored?	Yes/No	Para 3.2.3 (IRTMM)
39	Is the actual Output of the machine matches with rated Progress of the Machine? BCM - 0.2 Km/effective hour of working	Yes/No	Railway Board Letter No.98/Track-III/Tk/27-Pt dated 20-05-2003
40	Has it been ensured that watchman is posted round the block at the location while cutter bar & chain are left at site?	Yes/No	-
41	Any other specific Observation (not covered above):		

Safety Equipment

S.N.	Description	Quantity
1	Detonators in a tin case	1 Box
2	H.S. flag red	2 Nos.
3	H.S. flag green	1 Nos.
4	H.S. Tri colour lamps	2 Nos.
5	Chain & Padlock	1 Set
6	Clamp with Padlock	2 Nos.
7	10 t jack (CSM / UNIMAT)	1 No.
8	Crow bars	4 Nos.
9	Wooden blocks off sizes	8 Nos.
10	Gauge cum level	1 No.
11	Rail thermometer (dial type)	1 No.
12	Banner flag	2 Nos.
13	Portable Control Phone	1 No.
14	Walky Talky	2 Nos.
15	First Aid Box	1 No.
16	Skids	2 Nos.
17	Working time table of section where machine working	1 Copy
18	G&SR book with upto date amendment slips	1 Copy
19	4 Cell Flasher Light / LED Torch, 6 Watt	1 No.
20	LED Petromax / Led Lamps	1 No.
21	Safety Helmets	Machine Staff
22	Protective Clothing, Safety Shoes and Safety Gloves	Machine Staff
23	Track Machine Manual	1 No.
24	Accident Manual	1 No.
25	Fire Extinguisher	1 No.
26	Hooter (Manual / Remote)	2 Nos.
27	Hydraulic Hand Pump	1 No.
28	Emergency pneumatic/Hydraulic hose of sizes suiting to different machines(complete with end fittings)	1 No.

(H) Checklist for Machine Operator for Safe Operation of Track Machine

S.N.	Item	Check	Reference
	A. Personal		
1	Is valid Track Machine competency certificate issued by Dy.CE/Machine available with operator?	Yes/No	Para 4.3 (IRTMM)
2	Is valid Medical fitness certificate available? (Fit in A-3)	Yes/No	Para 4.3 (IRTMM)
3	Is operator carrying extra pair of spectacles, if wearing?	Yes/No / Not Applicable	Para 4.3 (IRTMM)
4	Are all safety equipment as indicated in IRTMM available?	Yes/No	Para 4.4.1 (IRTMM)
5	Is Operator conversant with the system of working and having route learning of the section?	Yes/No	GR 3.78(6)
6	Is the machine staff self-declared that liquor / intoxication not taken by him prior to reporting ON Duty?	Yes/No	-
7	Is the machine equipped with prescribed head & tail light, LV board, marker light and flasher light?	Yes/No	Para 4.4.2 (IRTMM)
8	Is the machine equipped with prescribed equipment in working condition as per IRTMM?	Yes/No	Para 4.4.3 (IRTMM)
	B. Yard		
1	Is Track Machine stabled clear of fouling mark, sand traps and not obstructing adjacent line(s)?	Yes/No	Para 4.6.5 (IRTMM)
2	Are necessary precaution taken against rolling down such as pinning down hand brakes, chaining and provision of skids and temporary buffers?	Yes/No	Para 4.5.1(i) (IRTMM)
3	Are concerned points set against the line on which track machine(s) is stabled and such points are secured with clamps or cotter bolts and padlocks.	Yes/No	Para 4.6.6 (IRTMM)
4	Is brake feel test conducted before proceeding from siding?	Yes/No	GR 4.31
5	Is the shunting order issued by on duty SM to move the machine in running line to/from the siding/stabling line?	Yes/No	Para 4.5.1(ii) (IRTMM)
6	Is shunting staff with proper shunting order available during shunting?	Yes/No	GR 5.13(1)
7	Is track machine having proper authority to proceed?	Yes/No	Para 4.5.1(iii) (IRTMM)
8	Is special caution order issued by SM duly signed by JE (P.Way) and Operator?		Para 4.5.2 (IRTMM)
9	Is authority issued to work all machines working in convoy as per Subsidiary Rule of Railway?	Yes/No	GR 4.65
10	Is facing point locked by clamp for movement of machines?	Yes/No	Para 4.6.6 (IRTMM)
	C. Block Section Working.		
1	Is proper line block taken for working the Track Machine indicating number of machines to work duly endorsed by SM with special instruction to proceed, work and return via right or wrong direction?	Yes/No	Para 4.5.1 (IRTMM)

S.N.	Item	Check	Reference
2	Is the adjacent line also blocked (and permitted by control and SM) in case of some BRM, T-28 etc. likely to foul adjacent line(s).		Para 4.6.2 (IRTMM)
3	Is SSE (P.Way) available on machine for working in block section?	Yes/No	Para 4.2.2 (IRTMM)
4	Are all restriction followed as detail given in caution order?	Yes/No	GR 4.09(1)
5	Is continuous whistling being done approaching to L-Xing?	Yes/No	Para 4.6.4 (IRTMM)
6	Is safe distance of 200 m between the machines moving in convoy maintained?		Para 4.6.4 (IRTMM)
7	Is the machine moving cautiously at very low speed which shall under no circumstances exceed 10 kmph in foggy weather / poor visibility/dust storm etc.?	Yes/No	GR 9.07(5)
8	Is minimum 200 meter distance kept machine to machine while travelling & 50 meter while working?	Yes/No	Para 4.6.4 (IRTMM)
	Is protection of work site in block section and also for adjoining track(s) in case of infringement carried out by SSE/JE (P.Way)?	Yes/No	Para 4.6.1 (IRTMM)
10	Is temporary whistle board is provided by SE/JE/P.Way on adjoining track at Track Machine work site?	Yes/No	Para 4.6.8(ii) (IRTMM)
11	Are hooter available with the track machine deployed at site?	Yes/No	Para 4.6.8(i) (IRTMM)
12	Are all trains passing adjoining track issued a caution order to "OBSERVE HAND SIGNAL, WHISTLE FREELY AND STOP IF REQUIRED"	Yes/No	Para 4.6.8(iii) (IRTMM)
13	Is PTW issued by OHE supervisor for working of machine in electrified area?	Yes/No	Para 3.6.2 (IRTMM)
14	Are all physical locking of working unit of machines checked after availing block?	Yes/No	As per RDSO's inspection checklist
15	Has it been ensured that the clearances (vertical and lateral) for OHE, Signal Post and any other structure are checked and there is no infringement to SOD before clearing the block?		Para 4.6.8(iv) (IRTMM)
16	Is the track certified fit and cleared for normal train operations subject to observation of speed restrictions?	Yes/No	Para 4.5.2 (IRTMM)
17	Did JE (P.Way) travel on last machine in work & proceed mode & first machine in work & return mode?	Yes/No	Para 4.5.2 & Para 4.5.3 (IRTMM)
Note:			
1	Please refer to GR 4.65, and subsidiary rules thereunder for working of Track Maintenance Machines		
2	Any other safety rule not covered above, shall also be followed by the machine operator in letter and spirit.		

(I) Maintenance Instructions & Guidelines for different On-Track Machines

SN	Name of Machine	Document	Issue Date	Report No.
1.	Ballast Cleaning Machine(BCM-RM-80)	Inspection Check List	Nov.2004	TM-73
		Maintenance Schedule	Jan.2005	TM-77
		Trouble-Shooting Manual	Jan.2002	TM-42
2.	Ballast Regulating Machine(BRM-Kershaw)	Inspection Check List	Feb.2006	TM-96
3.	Ballast Regulating Machine (BRM-Kershaw) Ballast Regulating Machine (PBR-400R)	Maintenance Schedule	Jun.2005	TM-87
		Trouble-Shooting Manual (English)	Jul.2004	TM-70
		Trouble-Shooting Manual(Hindi)	Jul.2004	TM-70
		Inspection Check List	Feb.2011	TM-156
4.	Ballast Regulating Machine (PBR-400R) Continuous Tamping Machine (CSM 09-32)	Maintenance Schedule	Dec.2010	TM-153
		Inspection Check List	October-2014	TM-74 Revision-1
5.	Continuous Tamping Machine (CSM 09-32) Dynamic Track Stabilizer(DGS-Plasser-62N)	Maintenance Schedule (English)	Jul.2004	TM-69
		Maintenance Schedule (Hindi)	Jul.2004	TM-69
		Trouble-Shooting Manual	Mar.2004	TM-62
		List of Critical Spare Parts (Rev.01)	Jul.2012	CSP
		Inspection Check List	Oct.2005	TM-92
6.	Dynamic Track Stabilizer (DGS-Plasser-62N) Shoulder Ballast Cleaning Machine (FRM-80)	Maintenance Schedule	Aug.2005	TM-90
		Trouble-Shooting Manual	Sept.2010	TM-148
		List of Critical Spare Parts	Aug.2004	CSP
		Inspection Check List	Sept.2005	TM-91
7.	Shoulder Ballast Cleaning Machine(FRM-80) Shoulder Ballast Cleaning Machine(FRM-85F)	Maintenance Schedule	Feb.2005	TM-79
		Critical Spare Part list of Shoulder Ballast Cleaning Machine (FRM-80)	Dec. 2014	CSP
		Inspection Check List	Dec.2009	TM-136
8.	Shoulder Ballast Cleaning Machine (FRM-85F) Multipurpose Track Tamping Machine (UNIMAT Compact-M)	Maintenance Schedule	Nov.2008	TM-125
		Inspection Check List	Dec.2006	TM-105
9.	Multipurpose Track Tamping Machine (UNIMAT Compact-M) Plasser Quick Relaying System (PQRS)	Maintenance Schedule	Jun.2006	TM-100
		List of Critical Spare Parts	Aug.2004	CSP
		Inspection Check List	Mar.2015	TM-108 Revision-1
10.	Plasser Quick Relaying System (PQRS) Point And Crossing Changing Machine (AMECA T-28)	Maintenance Schedule	Mar.2015	TM-101 Revision-1
		Trouble-Shooting Manual	Feb.2009	TM-128
		List of Critical Spare Parts	Aug.2004	CSP
		Inspection Check List	Sept.2006	TM-103
11.	Point And Crossing Changing Machine (AMECA T-28) Tamping Express (09-3X)	Maintenance Schedule	Aug.2006	TM-102
		Trouble-Shooting Manual	Mar.2007	TM-110
		List of Critical Spare Parts	Aug.2004	CSP
		Inspection Check List	Dec. 2014	TM-106 Revision-1
12.	Tamping Express (09-3X)	Maintenance Schedule	May.2005	TM-85

SN	Name of Machine	Document	Issue Date	Report No.
	Track Relaying Equipment (TLE-SIMPLEX)	List of Critical Spare Parts (Rev.01)	Jul.2012	CSP
		Inspection Check List	Jul.2011	TM-160
13.	Track Relaying Equipment (TLE-SIMPLEX) Track Relaying Train (TRT)	Maintenance Schedule	Jul.2011	TM-159
		Trouble-Shooting Manual	Feb.2009	TM-128
		Inspection Check List	Feb.2007	TM-107
14.	Track Relaying Train (TRT) Point & Crossing Tamping Machine (UNIMAT)	Maintenance Schedule	Oct.2006	TM-104
		Critical Spares Parts list of Track Relaying Train	Dec. 2014	CSP
		Inspection Check List	Sept.2004	TM-71
15.	Point & Crossing Tamping Machine (UNIMAT) Unomatic Tie Tamping Machine	Maintenance Schedule	Jun.2013	TM-175
		Trouble-Shooting Manual	Mar.2006	TM-99
		List of Critical Spare Parts	Aug.2004	CSP
		Inspection Check List	Dec.2004	TM-76
16.	Unomatic Tie Tamping Machine Utility Track Vehicle (Phooltas Make)	Maintenance Schedule	May.2005	TM-83
		Trouble-Shooting Manual	Jul.2005	TM-88
		Inspection Check List	Jun.2009	TM-132
17.	Utility Track Vehicle (Phooltas Make) Worksite Tamping Machine(METEX Make)	Maintenance Schedule	Jun.2008	TM-121
		Critical Spares Parts	Jul.2014	CSP
		Inspection Check List	Aug.2010	TM-144
18.	Worksite Tamping Machine(METEX Make) Worksite Tamping Machine (8049 Onwards)	Maintenance Schedule	Jun.2010	TM-141
		Inspection Check List	Mar.2009	TM-129
19.	Worksite Tamping Machine (8049 Onwards) UNIMAT-4S	Maintenance Schedule	Mar.2009	TM-130
		Trouble-Shooting Manual	Feb.2008	TM-117
		List of Critical Spare Parts	2013-14	CSP
		Maintenance Schedule	May-2012	TM-168
20.	UNIMAT-4S Rail Grinding Machine	Inspection Check List	Dec. 2014	TM-169 Rev.1
		Critical Spares Part list of Unimat-4S	April 2015	CSP
		Maintenance Schedule	Jan. 2014	TM-180
21.	Ballast Cleaning Machine (BCM-RM-80-92U)	Maintenance Schedule	Feb. 2014	TM -178
22.	Ballast Cleaning Machine (BCM-RM-80-92U) Worksite Tamping Machine VPR-02M (Kalugaputmash Make)	List of Critical Spare Parts	Nov.2013	CSP
		Inspection Check List	March 20 15	TM-186
		Inspection Check List	March 2015	TM-183
23.	Worksite Tamping Machine VPR-02M (Kalugaputmash Make) Inspection Check List	Maintenance Schedule	March 2015	TM-187
		INSPECTION OF UNIMAT-SPLIT HEAD MFI	AUGUST - 2015	TM-184

(J) Check list for Inspection of Concrete Sleeper Plant

Ref: IRS-T-39 August 2011, IRS-T-45- 1996 and Schedule of technical requirement (STR) Issued by Railway Board Vide letter no. 2010/Track-2/22/11/4 (STR) dated 27-5-2011

S. N.	Item	Remark
	A. About Plant	
1	Whether plant is approved for production?	Yes/No
2	Whether plant is approved for production of 1 in 8.5 T/out sleepers?	Yes/No
3	Whether plant is approved for production of 1 in 12 T/out sleepers?	Yes/No
4	Whether plant is approved for production of any other type of sleepers?	Yes/No
	B. Quality Assurance Plan & ISO Certification	
5	Whether QAP is approved by RDSO?	Yes/No
6	Whether Plant is having ISO: 9001-2008?	Yes/No
	C. About Organisation	
7	Whether plant is having at least one Graduate Civil Engineer?	Yes/No
8	Whether plant is having at least one Diploma Civil Engineer for each shift per casting shed?	Yes/No
9	Whether plant is having one Mechanical/Electrical diploma Engineer for maintenance of equipments?	Yes/No
	D. Layout Requirement	
10	Whether Cement godown capacity is as per STR? (Minimum covered area 576 Sqm.)	Yes/No
11	Whether HTS storage capacity is as per STR? (Minimum covered area 100 Sqm.)	Yes/No
12	Whether Insert godown capacity is as per STR? (Minimum covered area 100 Sqm)	Yes/No
13	Whether Steam curing chambers numbers and capacity are as per STR?	Yes/No
14	Whether Submerged water curing tank numbers and capacity are as per STR?	Yes/No
15	Whether Stacking area for finished sleepers is as per STR?	Yes/No
16	Is Area of Laboratory is as per STR? (General- 40 Sqm. & sleeper testing- 70 Sqm.)	Yes/No
17	Whether Lab is climate controlled?	Yes/No
18	For inspection of turnout sleeper set- Whether minimum two platforms of 70*6m with gantry arrangements for handling of inspection of two sets at a time is available?	Yes/No
19	Minimum requirements of Plant and Machinery as per STR for production line are available or not?	Yes/No
20	Whether Laboratory equipments are available as per STR?	Yes/No
	E. Raw Material Details	
E1	**Cement**	
21	Whether current cement source is approved by RDSO? Name of Supplier:_____.	Yes/No
22	Whether stacking of cement is as per IS code?	Yes/No
23	Whether placards are displaying week number, name of manufacturer?	Yes/No
24	Whether cement is being used on "first in first out" basis?	Yes/No
25	Whether manufacture's test certificate is available?	Yes/No
E2	**Raw Material Details : HTS Wire**	
26	Whether HTS wire is procured from BIS approved source?	Yes/No
27	Whether HTS wire is inspected by railway's inspecting Authority?	Yes/No
28	Whether HTS wire coils are wrapped in Jute/plastic cloths?	Yes/No
29	Whether Manufacture's tag & seal of Inspecting Authority available on coils?	Yes/No
30	Whether HTS wire coils are stacked in covered godown?	Yes/No

S. N.	Item	Remark
E3	**Raw material Details: Aggregates (CA1 & CA2)**	
31	Whether source is approved by RDSO?	Yes/No
E4	**Raw material Details: Inserts**	
32	Whether Inserts are being procured from RDSO approved source?	Yes/No
33	Whether Inserts are inspected by RITES with lead seal on every bag?	Yes/No
34	Whether dimensional checking of each & every inserts is done before use in Plant?	Yes/No
35	Whether Inserts are stacked in covered godown / heat no wise& supplier wise?	Yes/No
E5	**Raw material Details: PVC Dowel**	
36	Whether PVC Dowels are procured from RDSO approved source?	Yes/No
37	Whether PVC Dowels are inspected by RDSO?	Yes/No
	F. Production Shed	
38	Whether regular cleaning of mould's by cup wired brush is being done before use?	Yes/No
39	Filling of black putty for sealing the gap between end plates & mould is being done properly or not?	Yes/No
40	Whether Greasing for inserts pockets in moulds is done?	Yes/No
41	Whether labours are doing hand pulling of HTS wire for removal of sag before tensioning?	Yes/No
42	Is Calibration of tensioning m/c as per schedule being done?	Yes/No
43	Whether Tensioning m/c is equipped with auto cut-off?	Yes/No
44	Whether tensioning supervisor is measuring the elongation of HTS wire of each & every bench and entering it in register regularly?	Yes/No
45	Whether Calibration of bottom vibrators as per schedule is done?	Yes/No
46	Whether Calibration of automatic batching plant as per schedule is done?	Yes/No
47	Whether Pouring of cement in mixture is through screw conveyor?	Yes/No
48	Whether calibration of thermometers of steam chambers as per schedule being carried out?	Yes/No
49	Whether Keeping & maintaining half hourly record of temperature of each & every chambers by supervisor, as per steam cycle?	Yes/No
50	DE tensioning of benches after required release strength is done or not?	Yes/No
51	Whether Paint marking of batch no and date of casting on every demoulded sleeper is done?	Yes/No
52	Whether End painting of every demoulded sleeper before submerged for curing is done?	Yes/No
53	Whether casted sleeper in submerged water curing tanks are kept in layer wise just after demoulding?	Yes/No
54	Whether stacking of sleepers is batch wise & type wise(not more than 25 layers in each stack) in stacking yard?	Yes/No
55	2nd coat end painting of sleepers after submerged water curing	Yes/No
56	Is Critical dimensional checking of sleepers done completely? (100 %)	Yes/No
57	Is 10% General dimensional checking of sleepers done?	Yes/No
58	FTC checking of sleepers done or not?	Yes/No
	G. Record Keeping & Documentation	
59	Whether Lab tests of raw materials are being done?	Yes/No
60	Whether Production registers maintained properly?	Yes/No
61	Whether Inspection certificates of raw materials available?	Yes/No
62	Whether Steam curing records available?	Yes/No
63	Whether Dimensional checking register of sleepers updated?	Yes/No
64	Whether Dimensional checking of moulds & benches. Its repair register is maintained properly?	Yes/No
65	Whether Calibration of Machines, pressure gauges & Proving rings is done?	Yes/No
66	SBT testing of sleepers, 15days water cured cubes and released cubes register is maintained upto date?	Yes/No
67	Whether Statistical analysis report register is available?	Yes/No

(K) Checklist for Bridges and Tunnels

S. N.	Description	Remarks	Reference
1	Whether the bridge is Minor (Individual span < 12 m & Total Lineal Waterway < 18 m)? Span=……m	Yes/ No	IRBM 1103 (3) (c)
2	Whether the bridge is Major (Individual span >12 m or Total Lineal Waterway > 18 m)? Span=……m	Yes/ No	IRBM 1103 (3) (b)
3	Whether the bridge is Important bridge (Total Lineal waterway 300 m OR Total Waterway 1000 m^2 OR Classified as "IMPORTANT BY CE/CBE")? Span=……m	Yes/ No	IRBM 1103 (3) (a)
4	Whether the date of Inspection is indicated on the bridge? If so, what is Last date of Inspection? Date=……	Yes/ No	IRBM-203 (1)
5	Whether the date of Painting is indicated on the bridge? If so, what is Last date of Painting?	Yes/ No	IRBM-203 (1)
6	Whether the date of Cleaning & Greasing is indicated on the bridge? If so, what is Last date of Cleaning & Greasing?	Yes/ No	IRBM 1107 (4) (v)
7	Whether the date of lubrication of bearing is indicated on the bridge? If so, Last date of lubrication done? Date=……	Yes/ No	IRBM 1107 (4) (v)
8	Whether bridge / FOB is over railway track, whether it is as per SOD? If so, what is the vertical clearance (5870 mm / 6350 mm)? Vertical clearance=……	Yes/ No	SOD CH-1(10)(iii) IRBM-1107 (14) (a) (ii)
9	What is the clear horizontal distance between respective centre of track and any other structure (limiting value 2135 mm)?	Yes/ No	SOD CH-1 (8)
10	Whether Trolley refuge is provided? If so, Nos. required _____ and Nos. provided _____.	Yes/ No	IRBM- 1107 (8)
11	Whether creep of bridge girder is noticed?	Yes/ No	
12	Whether condition of the footpath is good?	Yes/ No	IRBM 1107 (9)
13	Whether condition of drainage arrangement is good?	Yes/ No	IRBM-210 (2)
14	Whether the Camber has been recorded at the time of Inspection? If so, What is the method of recording Camber? What is the Camber	Yes/ No	IRBM-212
	a) As per Drawing?	Yes/ No	IRBM-1107 (15) (b)
	b) As per time of Last inspection?	Yes/ No	
	c) At the time of Present Inspection?	Yes/ No	
15	Whether the bridge is to be inspected at increased frequency? If so, What is to be increased frequency?	Yes/ No	IRBM-107 (1)
16	Whether the entries are made in Bridge history Book?	Yes/ No	IRBM-107 (2)
17	Whether the Steel members are free from distortion?	Yes/ No	IRBM 1107 (5)(c)
18	Whether the Steel members are free from Corrosion?	Yes/ No	IRBM-216

S. N.	Description	Remarks	Reference
19	Percentage of Defective, Broken, Loose, Corroded & Badly Driven rivets: a) Boom Flanges b) Web c) Main Joints d) Cross Girders e) Stringers f) Bracing& Foot Path g) Base Plate		IRBM-215 (3)
20	Whether any member of steel girder is overstressed? (As advised by CBE)	Yes/ No	IRBM-212 (a)
21	Whether steel members are free from cracks?	Yes/ No	IRBM-213 (1)
22	Whether Early steel girder floor system is inspected once in a year? If so, What is the Last inspection date?	Yes/ No	IRBM-107 (1) (c), 1102-(1) (e)
23	Whether Welded girder is inspected once in a three years? If so, what is the last inspection date?	Yes/ No	IRBM 1102-(1) b
24	Whether proper scraping done wherever required?	Yes/ No	IRBM 217-(1) b
25	Whether there is any local or uniform corrosion over large area?	Yes/ No	IRBM 216-(3) (i)
26	Whether some pitting/corrosion is formed? If so, Location of Pitting/ corrosion?	Yes/ No	IRBM-216-(3) (ii), 1107 (5) (f) (xvii)
27	Whether the average thickness of paint film is as per following requirement? a) Metalising (150 Micron) b) Epoxy Painting (200 Micron)	Yes/ No	IRBM-218-(1) (ii) (b) IRBM-218-(2) (ii)
28	Whether the Painting has been done as per schedule (1 to 6 years)? If so, What is the last date of Painting?	Yes/ No	IRBM-217-(5)
29	Whether all Holding Down (HD) Bolts are intact? What is the percentage of intact bolts per bearing? ___	Yes/ No	IRBM 1107-(4)(ii)
30	Whether locking strips and guide strips are in good condition?	Yes/ No	
31	Whether bearing strip butts with locking strip?	Yes/ No	
32	Whether schedule of greasing (once in 3 years) of bearings has been carried out? Date of greasing…….	Yes/ No	IRBM 222-(2) (a)
33	Whether there are any cracks in Knuckle slab, Saddle Plate and Roller?	Yes/ No	BS-102-(3.2.3.1)
34	Whether bearing is centralized?	Yes/ No	------
35	Whether replacement of oil in oil bath bearing once in 5 Years done? Date of oil replacement…….	Yes/ No	IRBM-222-(2) (f)
36	Whether connection of saddle plate with bottom boom is intact?	Yes/ No	------

S. N.	Description	Remarks	Reference
37	Whether condition of elastomeric bearing is examined? If so, than a) Is shear deformation more than 50% of height of pads? b) Is compression more than 5% of the height of Pads? c) While in rotation any loss of contact between bearing and girder?	Yes/ No	BS-102-(3.5.3)
38	Whether any tilting/settlement is reflected in cracks in substructure?	Yes/ No	IRBM 1107(1) (a) (ii)
39	Whether there is any unusual scour around the piers?	Yes/ No	IRBM 1107(1) (a) (i)
40	Whether water way is free from obstruction?	Yes/ No	IRBM 117(1) (f) IRBM-1107(3)(ii)
41	Whether flooring, drop wall & curtain wall are provided? What is the condition of component?	Yes/ No	IRBM 1107(1) (b)
42	Whether (for foundation perennially underwater) underwater inspection done? Date of inspection--_____	Yes/ No	IRBM 1107(2) (d)
43	Whether the Pitching of Guide bund/ groins is intact?	Yes/ No	IRBM-809 (4) (a), IRBM-1107(3) (a)
44	Whether there is any erosion of bank in the vicinity of abutment?	Yes/ No	IRBM 1107 (1)(a)
45	Whether there is any displaced / crack in bed block?	Yes/ No	IRBM- 221,514
46	Whether any bed block is shaken?	Yes/ No	IRBM 1107 (4/a/iii)
47	Whether there is any crushing mark under bed plate?	Yes/ No	
48	Whether any inspection platform is available?	Yes/ No	IRBM 1107(1) (a)
49	Whether there is any crack in masonry?	Yes/ No	IRBM 1107 (2) (a)
50	If yes, whether the crack is progressive?	Yes/ No	IRBM 1107 (2)
51	Whether there is any weathering and leaching of mortar?	Yes/ No	
52	Whether there is any vegetation growth in masonry?	Yes/ No	
53	Whether there is any crack in abutment face?	Yes/ No	
54	Whether backfill materials are intact in case of horizontal crack on abutment face?	Yes/ No	
55	Whether any bulging/tilting is noticed in ballast wall on abutment?	Yes/ No	IRBM 1107- (2)
56	Whether there is Highest Flood Level (HFL) with year & Danger Level (D L) marking in abutments and gauge marking on shore piers on important bridges?	Yes/ No	IRBM-1107-(10) & 203 (2 & 3)
57	Whether bridge tablet is showing direction of flow, Bridge Number, span arrangement, Rail level etc. has been provided?	Yes/ No	IRBM-1107(10) d, f, h & 203 (2 to 9)
58	Whether ballast retainer is leaning?	Yes/ No	

S. N.	Description	Remarks	Reference
59	Whether cracks in Arch Barrel with special reference to its direction of propagation & length of the crack observed?	Yes/ No	IRBM-208-(1) (I, IRBM-1107(2) (e)
60	Whether any cracks in the intrados are observed to be propagating in transverse direction i.e. direction perpendicular to traffic?	Yes/ No	IRBM-208-(1) (ii), IRBM-1107(2) (e)
61	Whether immediate rehabilitation measures for repair of cracks in the intrados planned & such cracks have been kept under close observation?	Yes/ No	IRBM-209 IRBM-1107(2) (e)
62	Whether crushing of masonry of Arch, loosening of Key stone etc. noticed?	Yes/ No	IRBM-208-(1) (iv), IRBM-1107(2) (e) (viii)
63	Whether any leaning of Parapet wall noticed and weep holes in Parapet wall are cleared?	Yes/ No	IRBM-208-(3) IRBM-1107 (2) (e) (xi)
64	Whether any tell-tale marks of repairs earlier conducted?	Yes/ No	IRBM-1107 (2) (c)
65	Whether there are any loose boulders at tunnel approaches & cutting and major discontinuities?	Yes/ No	IRBM-1007 (2) IRBM-1012
66	Whether any weep holes are choked in retaining walls and side drains?	Yes/ No	IRBM-1008 (1.4) IRBM-1012
67	Whether any tree is precariously standing on the top of approach cutting and slopes?	Yes/ No	IRBM-1007 (2) & para 1012 (5)
68	Are catch water drains on the approaches and on the top of tunnel cleaned?	Yes/ No	IRBM-1007 (2)
69	Whether any portal has cracks in the masonry or has shaken bulging masonry?	Yes/ No	IRBM-1007 (2)
70	Whether there are any loose boulders in tunnel wall and roofing?	Yes/ No	IRBM-1007 (4, 2)
71	Whether there is any seepage inside tunnel through rock joints in tunnel wall and roof noticed?	Yes/ No	IRBM-1007 (4)
72	Whether side drain and drainage inside the tunnel is clean? Whether ventilation shafts and adits, are free from vegetation? Whether there is any water logged area near heavy seepage zone of tunnel?	Yes/ No	IRBM-1007 (5, 6, 7)
73	Whether all fittings of steel sleepers and rails particularly in heavy seepage zone are intact?	Yes/ No	IRBM-1007 (9)
74	Whether any infringements in moving dimension are noticed?	Yes/ No	IRBM-1007 (3)
75	Whether tablets on top of tunnel at entrance indicating length, year of construction and other information are available?	Yes/ No	IRBM-1003
76	Are water-ways clear at the bridge?	Yes/ No	IRPWM-1124 (2)
77	Whether SWR is continued over bridge (span< 13.3 m), what is actual span?	Yes/ No	IRPWM Para 226 (3) (a)

S. N.	Description	Remarks	Reference
78	Is any fish plate joint is on bridge or within 6 M of abutment? (None allowed)	Yes/ No	
79	For 26 m long rolled rails, whether 1 m long fish plates with 6 bolts are provided.	Yes/ No	IRPWM Para 226 (3) (c)
80	Whether permissible gaps at joints (as per Zone and temperature range) are given?	Yes/ No	IRPWM Para 320 (3)
81	Is there any creep at joints noticed? If yes,	Yes/ No	IRPWM Para No .631 (4)
	LH side	----- mm	
	RH side	------ mm	
82	Whether at approach two well anchored standard rail lengths are provided?	Yes/ No	Para No. 226 (5) of IRPWM
83	Whether LWR is continuing on the bridge (span <=20 m, 20 m to 43 m, >43 m), what is actual span?	Yes/ No	Para No. 331 (1) to (3) of IRPWM
84	a) Whether rail free fastenings are provided from pier to pier with SEJ?	Yes/ No	
	b) Whether SEJ is provided at the far end of the bridge?	Yes/ No	
85	Whether all the provisions of IRPWM were followed in continuing LWR on the bridge?	Yes/ No	
86	Whether rail replacement has been done for bridge and approach (100 m on either side) for all Important bridges and such of the major bridges where the height of bank is 5.0 m and more, all tunnels and their approaches (upto 100 m on either side) shall be half of the GMT.	Yes/ No	Para 702 (1)(d) of IRPWM
87	C/c spacing between sleepers (450 mm), what is actual value?		Para No. 227 (2) of IRPWM
88	Clear spacing between sleepers.	……..mm	
89	Whether guard rail are provided on girder bridges?	Yes/ No	Para No. 228 of IRPWM
90	Clearance between guard rail and running rail? (250+50/ 250-50 mm)		Para No. 228 of IRPWM
91	Straight length of guard rail beyond the span L1 (1875 mm)?		
92	Length of flared portion of guard rail L2 (4875 mm)?		
93	How much below is the top table of guard rail from top of running rail (< 25 mm)?		
94	Whether the ends of guard rails are vertically bent and buried and block of timber is provided	Yes/ No	
95	Whether pathway has been provided at the centre of the track with chequered plates?	Yes/ No	Para No. 229 of IRPWM
96	Whether all AT welds on bridge as well as on approaches of 100 M of both ends are provided with joggled fish plates and clamps or with fish bolts at two far end bolts?	Yes/ No	Para No. 307 (4) of IRPWM

S. N.	Description	Remarks	Reference
97	Whether trolley refuses are provided?(at every 100 m or on every pier)	Yes/ No	Para No. 646 (3) of IRPWM
98	Whether track Parameters like gauge, cross level, cant, versines are within limits?	Yes/ No	IRBM-1107-(7) (g) (i)
99	Whether condition of track fittings and their tightness, particularly rubber pads in case of steel channel sleeper are good?	Yes/ No	
100	Whether guard rail are bent down in the ballast at approach?	Yes/ No	IRBM 1107-(e) iii
101	Whether tightness of hook bolts checked by actually touching with hand?	Yes/ No	IRBM-1107-(c)
102	Whether arrow/punch mark is provided on top of hook bolts, to verify their correct position, and whether the arrows/punch marks are pointing towards the centre line of track ?	Yes/ No	
103	Whether steps are provided for inspection of bridge?	Yes/ No	
104	Whether anti sabotage/theft fittings are provided on the bridge?	Yes/ No	

(L) CHECK LIST FOR PASSAENGERS AMENITIES

(Ref.: Railway Boards Letter No. 2018/LM/PA/03/06 Dated 09.04.2018)

A. Categorization of Stations for provision of Passenger Amenities

Category of Station	Criteria of Proposed Earnings	Number of Stations based on Earnings	Criteria of Proposed outward Passengers Handled@	Number of Stations based on passengers handled	Total number of Stations
Non- Suburban Stations					
NSG1	>500 Crore	14	>20 Million	7	21
NSG 2	>100 crore ≤ 500 Crore	70	> 10 Million ≤ 20 Million	7	77
NSG 3	> 20 Crore ≤ 100 Crore	218	> 05 Million ≤ 10 Million	9	227
NSG 4	> 10 Crore ≤ 20 Crore	210	> 02 Million ≤ 05 Million	76	286
NSG 5	> 01 Crore ≤ 10 Crore	1046	> 01 Million ≤ 02 Million	10	1056
NSG 6	< 01 Crore	4238	≤ 01 Million	0	4238
Suburban Stations					
SG 1	> 25 Crore	24	> 30 Million	11	35
SG 2	> 10 Crore ≤ 25 Crore	52	> 10 Million ≤ 30 Million	22	74
SG 3	≤ 10 Crore	398	≤ 10 Million	0	398
Halt Stations					
HG 1	> 50 Lakh	18	03 lakh	12	30
HG 2	> 05 lakh ≤ 50 lakh	538	> 01 lakh ≤ 03 lakh	30	568
HG 3	≤ 05 Lakh	1728	≤ 01 lakh	0	1728
	Total	**8554**		**184**	**8738**

NSG (Non Suburban Grade), SG (Suburban Grade), HG (Halt Grade)

Total SG Category of Station = Total 507
Total HG Category of Station = Total 2320

@ Passengers handled is taken on the basis of actual outward passengers handled at the station.

* The categorization proposed is on the basis of data for originating Passengers and earning Provided by Zonal Railways.

GMs shall have powers to categorize a station as NSG 4 category if it is a place of Tourist importance and/or is an important junction station.

B(1) Minimum Essential Amenities at various categories of Non-Suburban Station

Sl. No.	Amenities		Station Category				
		NSG1	NSG2	NSG3	NSG4	NSG5	NSG6
1	Drinking water Piped /Hand pump	Yes	Yes	Yes	Yes	Yes	Yes
2	Waiting hall	Yes	Yes	Yes	Yes	Yes	Yes
3	Seating arrangement	Yes	Yes	Yes	Yes	Yes	Yes
4	Platform shelter	Yes	Yes	Yes	Yes	Yes	Yes
5	Urinals	Yes $	Yes $	Yes $	Yes	Yes	Yes
6	Latrines	Yes $	Yes $	Yes $	Yes	Yes	Yes
7	Platform-High-level @	Yes	Yes	Yes	Yes	Yes	Yes
8	Lighting #	Yes	Yes	Yes	Yes	Yes	Yes
9	Fans	Yes	Yes	Yes	Yes	Yes	Yes
10	Foot over bridge @	Yes *	Yes *	Yes *	Yes	Yes	Yes
11	Time Table Display	Yes	Yes	Yes	Yes	Yes	Yes
12	Clock	Yes	Yes	Yes	Yes	Yes	Yes
13	Water Cooler	Yes	Yes	Yes	Yes	Yes	-
14	Public Address system/Computer based announcement	Yes	Yes	Yes	Yes	Yes	Yes
15	Parking-cum-circulatory area, with light	Yes	Yes	Yes	Yes	Yes	-
16	Electric Train indicator board **	Yes	Yes	Yes	Yes	-	-
17	Signage (standardized)	Yes	Yes	Yes	Yes	-	-
18	Dustbins ***	Yes	Yes	Yes	Yes	Yes	Yes

* With cover

As per Annexure 2 of Railway Board's letter No. 2004/Elect(G)/109/1 dated 18.05.2007.

** At station entrance/concourse on foot over bridges 9at landing locations) and on platforms located appropriately to guide passengers at every stage. Priority to be accorded as per category of stations subject to stations earnings and passenger foot fall.

*** Adequate number of uniformly designed standard dustbins should be provided at all categories of station at NSG1, NSG2, NSG3, NSG4 & NSG5 category of stations, dustbins should be provided at regular spacing of 50m on each platform. At NSG6 category station, adequate number of dustbins as required should be provided. It must be ensured that provision of dustbins dos not impeded the free flow of passengers.

@ These items are considered as basic requirement and hence they shall form a part of essential amenities for all categories of stations.

$ Toilets/Urinals at NSG/1-3 category stations shall have auto flush after every use.

B(2) Minimum Essential Amenities at various categories Of Suburban Stations

Sl. No.	Amenity	STATION CATEGORY		
		SG1	SG2	SG3
1	Drinking water Piped/ Hand Pump	Yes	Yes	Yes
2	Seating arrangement	Yes	Yes	Yes
3	Platform Shelter	Yes	Yes	Yes
4	Urinals	Yes	Yes	Yes
5	Latrines	Yes	Yes	Yes
6	Platforms- High level	Yes	Yes	Yes
7	Lighting #	Yes	Yes	Yes
8	Fans	Yes	Yes	Yes
9	Foot over	Yes	Yes	Yes
10	Time Table Display	Yes	Yes	Yes
11	Clock	Yes	Yes	Yes
12	Water cooler	Yes	Yes	-
13	Dustbins ***	Yes	Yes	Yes
14	Public Address system / Computer Based announcement	Yes	Yes	Yes
15	Electronic Train indicator board.	Yes	Yes	Yes

As per Annexure 2 of Railway Board's letter No. 2004/Elect(G)/109/1 dated 18.05.2007.

*** Adequate number of uniformly designed standard dustbins should be provided at all categories of station at SG1, SG2 category of stations, dustbins should be provided at regular spacing of 50m on each platform. At SG3 category station, adequate number of dustbins as required should be provided. It must be ensured that provision of dustbins dos not impeded the free flow of passengers.

B (3) Minimum Essential Amenities at various categories of Halt Stations

Sl. No.	Amenity	STATION CATEGORY		
		HG1	HG2	HG3
1	Drinking water Piped[1]/Hand Pump[2]	Yes[1]	Yes[2]	Yes[2]
2	Waiting hall	Yes	Yes	-
3	Platform Shelter Shady trees	Yes* Yes	- Yes	- Yes
4	Platform -High level	Yes	Yes	Yes
5	Lighting #	Yes	Yes^	Yes^
6	Foot over bridge$	Yes	Yes	Yes
7	Time Table	Yes	-	-
8	Clock	Yes	-	-
9	Dustbins ***	Yes	Yes	Yes

* Bus type modular shelters.

$ In double line section with two PFs provided with high level platforms.

^ At stations where the trains are scheduled to halt after sunset.

As per Annexure 2 of Railway Board's letter No. 2004/Elect(G)/109/1 dated 18.05.2007.

*** Adequate number of uniformly designed standard dustbins should be provided at all categories of station at HG1 category of stations, dustbins should be provided at regular spacing of 50m on each platform. At HG2 & HG3 category station, adequate number of dustbins as required should be provided. It must be ensured that provision of dustbins dos not impeded the free flow of passengers.

(C) NORMS OF MINIMUM ESSENTIAL AMENITIES

C(1) At various Categories of Non–Suburban Stations

Sl. No.	Amenity		STATION CATEGORY				
		NSG1	NSG2	NSG3	NSG4	NSG5	NSG6
1	Drinking water ^ (No. of taps/PF) $ ^^	20	20	20	20	8	2*
2	Waiting hall @ Sqm	250	250	125	75	30	15
3	Seating arrangement (No. of seats/PF)	150	150	125	100	50	10
4	Platform shelter (on each PF) #	500 sqm	500 sqm	400 sqm	200 sqm	50Sqm +	50Sqm +
5	Urinals ##	12	12	10	6	4	1
6	Latrines ###	12	12	10	6	4	1
7	Platforms	High Level	High Level	High Level	High Level	High Level	High Level
8	Lighting ++ (Lux Level)	As per Annexure II of Board's letter No. 2004/Elec(G)/109/1 dated 18.5.2007					
9	Fans ©	As per below					
10	Foot over bridge ®	1 with cover	1 with cover	1 with cover	1	®®	1
11	Time table Display	As per extant instructions.					
12	Clock	To be decided by Zonal Railways.					
13	Water cooler £	2 on each PF	2 on each PF	2 on each PF	2 on each PF	1 on main PF	-
14	Public Address system system/ computer based announcement	As per extant instructions.					
15	Parking-cum-circulatory area, with lights	As per extant instructions					
16	Electronic Train indicator board	As per extant instructions					
17	Signage (standardized)	Yes	Yes	Yes	Yes	-	-
18	Dustbins ***	Yes	Yes	Yes	Yes	Yes	Yes

(C) NORMS OF MINIMUM ESSENTIAL AMENITIES

C (2) At various Categories of Non–Suburban Stations

Sl. No.	Amenity	STATION CATEGORY		
		SG1	SG2	SG3
1	Drinking water^ (No .of taps/PF) $ ^^	6	6	6
2	Seating arrangement (No. of seats/PF)	10	10	10
3	Platform shelter (on each PF) #	200sqm	200sqm	200sqm
4	Urinals ##	4	4	4
5	Latrines ##	2	2	2
6	Platforms	High Level	High Level	High Level
7	Lighting ++ (Lux level)	As per Annexure II of Board's letter No. 2004/Elec(G)/109/1 dated 18.5.2007		
8	Fans ©	As given below		
9	Foot over bridge ®	3 (20 ft wide)	2 (20 ft wide)	1 (20 ft wide)
10	Time table Display			
11	Clock	To be decided by Zonal Railways		
12	Water cooler £	2 on main PF	2	2
13	Dustbins	1 per 50 sqm area		
14	Public Address system system/ computer based announcement	As per extant instructions		
15	Electronic Train indicator board.	As per extant instructions		

(C) NORMS OF MINIMUM ESSENTIAL AMENITIES

C(3) At various categories of Halt Stations

Sl. No.	Amenity	STATION CATEGORY		
		HG1	HG2	HG3
1	Drinking water ^ (No. of taps/PF) $ ^^	Appropriate drinking water facility **	Appropriate drinking water facility **	Appropriate drinking water facility **
2	Waiting hall @ sqm	10 sqm. Booking office Cum waiting hall	10 sqm. Booking office Cum waiting hall	-
3	Platform shelter (on each PF) #	Bus type modular shelter	Shady tree	Shady tree
4	Platforms ****	High Level	High Level	High Level
5	Lighting ++ (Lux Level)	As per Annexure II of Board's letter No. 2004/Elec(G)/109/1 sated 18.5.2007		
6	FOB	1	1	1
7	Time table display.	As per extant instructions		
8	Clock	1	-	-
9	Dustbins ***	As per extant instructions		

% At NSG 1-5 category of stations, the booking counters to operate round the clock at stations where there is no night working.

^ At stations falling in water scarcity zones or where water source dries up in summer, drinking water facility should be ensured at every platform by means of syntax tanks/CANS/Matkas/Piaos etc. as decided by GM of the railways. At less important stations, particularly those falling under NSG6 and HG category stations one water supply source at a location convenient to passengers may be provided. Drinking water facility would include all necessary units whether donated by private or provided by the Railways themselves.

$ There should be one drinking water tap suitably for use by disabled persons on alternate water booths at every platform.

^^ Adequate number of water taps should be suitably located to serve passengers of GS coaches, i.e. at the end of platforms.

* AT NSG6 category stations, wherever piped water supply is not feasible due to local conditions, separate arrangement for water at each platform shall be made available with the approval of General Manager of the concerned Railway.

** Drinking water arrangements should be made at halt stations by means of water taps/ hand pumps/tube well/sintex tanks/piaos as decided by the General Manager of the concerned Railway.

*** Adequate number of uniformly designed standard dustbins should be provided at all categories of station at NSG/1-5, SG/1-2 & HG1 category of stations, dustbins should be provided at regular spacing of 50m on each platform. At NSG6, SG-3 & HG/2-3 category station, adequate number of dustbins as required should be provided. It must be ensured that provision of dustbins dos not impeded the free flow of passengers.

@ If the variation is marginally on the lower side (upto -5 sqm), then it can be taken to be adequately provided.

Shelter should be suitably spaced ensuring natural light and ventilation and covering areas from where passengers board the General Coach.

+ Preferably light weight shelters.

1. Number of latrines/urinals includes provision in waiting room/halls. 1/3rd of the toilet may be reserved for ladies. In case of 2 toilets, one each should be earmarked for ladies & gents.

2. Number of latrines/urinals can be reduced in water scarcity areas by the Railway with the approval of GM.

3. Includes pay and use toilets. The policy for setting up such toilets be referred in terms of Board's letter no. 05/TGIV/10/San/32/Pay& Use Policy dated 7.6.06

® New FOBs should be at least 20 feet wide at NSG1-3 and SG1-3 category stations wherever feasible. New FOBs at NSG1-3 should be compatible for installation of escalators amenable for wheelchair users.

®® Foot over bridges shall be provided at all stations with more than one platform during doubling/gauge conversion wherever the same are not available.

£ To be provided as per Board's letter no. 69/Elce9g)/730/8 dated 30.03.1971.

**** (a) On all new lines, gauge Conversion & doubling projects, minimum level of platforms shall be high level. No low/medium level platform shall henceforth be constructed (in suppression of Board's letter no. 2003/LMB/14/29 Dt. 26.4.2005 and Board's letter No. 2012/LM(PA)/03/07/Policy dated 06.07.12). (b) Wherever platform height gets reduced on account of track works, the same should be restored (Board's letter No. 2003/LMB/14/29 Dt. 03.02.2005). (c) Platform should be high level of notified minimum height wherever EMU trains are dealt with 9clarification to board's letter No. 2006/LMB/121 Dt. 11.8.2006).

++ Solar energy based lighting needs to be introduced to provide emergency lighting as NSG1-5, SG1-3 and HG1 category stations.

© For covered platforms having width of 6-9m, one row of fans should be provided @one fan in the centre of supporting columns. For covered platforms with more than 9m width, fans should be provided in 2 rows.

Note: (1) At stations where only on ASM is posted, only one booking window will be provided. In respect of NSG-6 category stations, where the earnings is less than Rs. 50 lakh per annum, the quantum of amenities to be provided could be decided by the General manager based on actual requirements.

(2) Scale of all the amenities above are the bare minimum to be provided at the appropriate category of stations. Amenities over and above the prescribed minimum scales will continue to be provided as per norms for provision of amenities at "Recommended Level".

(D) NORMS OF RECOMMENDED LEVEL OF AMENITIES

D(1) At various Categories of Stations

Nmax = Maximum number of trains dealt with in any interval of half an hour at the stations multiplied by the average number of passengers dealt per train at that station. The average number of passengers per train at a station shall be the average number of daily passengers dealt with at the station divided by the number of trains stopping at the station during 24 hours.

Ndb = Design figure for number of passengers for Non-suburban stations to be calculated as Ndb = 0.3 (Nmax)

Nds = Design figure for number of passengers for Suburban and halt stations to be calculated as Ndb = 0.45 (Nmax)

Sl. No.	Amenities	Recommended scale for provision	
		Non-Suburban	Suburban and Halt Stations
1	Drinking water (No. of taps)	No of taps = Nmax/25. Taps should be distributed so that every alternate Coach gets benefit of a tap	No. of taps = Nmax/25.
2	Waiting hall/ Shed	1.394 Ndb sqm	1.394 Nds sqm (Excluding C)
3	Seating arrangement (No. of seats)	0.4 Ndb	0.4 Nds
4	Platform shelter * (on each PF) with solar panel for lighting and fans	0.28 Nmax NSG/1-4 to SG/1-3 Category stations	0.28 Nmax NGS/1-4 to SG/1-3 Category stations
5	Urinals #	Ndb/200	Nds/200
6	Latrines #	Ndb/200	Nds/200
7	Lighting ®	As per Board's letter no. 95/Elec(G) 138/5 dated 19.3.96 Norms indicated in Note below.	
8	Fans **	As per Board's letter no. 95/Elec(G) 138/5 dated 19.3.96	
9	Time table Display	To be decided by the Zonal Railways.	
10	Clock	To be decided by the Zonal Railways.	
11	Bathrooms $	1/400 Ndb	1/400 Ndb at other junction & terminal stations only.
12	Water coolers	To be provided if total number of passengers, inward and outward is more than 1000 per day (As per Bd's letter no. 69/ Elect9G0 /730/8 Dt 30.3.71 To be decided by the Zonal Railways.)	
13	IVRS	NSG/1&2 -48 lines (call 72000) NSG/3&4 -24 lines (calls 5000-20000)	A central IVRS with adequate lines should be provided to cover all suburban stations – Minimum 6 lines if IVRS is Otherwise justified
14	Public Address system system/ Computer based announcement	To be decided by the Zonal Railways	
15	Parking-cum-circulatory area, with lights	To be decided by the Zonal Railways	
16	Electronic Train indicator board.	To be decided by the zonal Railways	
17	Public phone booth	To be decided by the zonal Railways	

Sl. No.	Amenities	Recommended scale for provision	
		Non-Suburban	Suburban and Halt Stations
18	Signage (standardized)	To be decided by the zonal Railways	
19	Coach guidance System/ coach indication boards	NSG/1-4 to SG/1-3 category stations	
20	Insect catchers	NGS/1-3 category stations.	
21	Infant Nursing Cubicle.	NGS/1-3 category stations	
22	Universal Mobile charging points	To be decided by the Zonal Railways	

* At important category stations and suburban (SG/1-3) stations, efforts should be to cover the entire PF.

1/3rd of urinals/latrines be reserved for ladies.

® (a) Emergency light: From Auxiliary Transformer (AT) connected to traction supply, 10 light points NSG/1-3 category stations on each platform. Emergency light for DG set/Solar supply on each platform at all stations where traction supply is not available, except NSG/6 and HG/1-3 category stations. (b) Minimum One light in ASM room, Booking Window, Waiting hall each, one light on each FOB at every 30 meter, 03 lights on each platform and one light in circulating area shall be provided as emergency light with suitable back up power source such as Solar/ wind etc.

** For covered platforms having width of 6-9m. One row of fans should be provided @one fan in the centre of supporting columns. For covered platforms with more than 9m width, fans should be provided in 2 rows.

$ At suburban stations, bathrooms need not be provided.

Note: Norms for recommended level of illumination at various categories of stations are as follows [Ref.: Railway Board's Circular no. 2005/Elec(G)/150/1 Dt. 28.2.06]

S. No.	Area	Proposed lux level for Scale/ Category I/II/III stations
1	Station circulating area	50/ 30/ 20
	Outdoor car parking	20/ 20/ 20
2	Station concourse area	100/ 100/ 100
3	Booking office, reservation office, enquiry office	200 (localized above counter) & 100 in remaining areas for Scale/category I, II & III stations
4	Parcel & luggage office counter	150/ 150/ 150 150/ 150/ 150
5	Platform covered Open area	50/ 30/ 20
6	Waiting halls/ rooms	100/ 100/ 100
7	Retiring rooms	100/ 100/ 100
8	Restaurant & Kitchen in general building area: i) Restaurant area: ii) Kitchen: iii) Stores:	 150/ 150/ 150 100/ 100/ 100 100/ 100/ 100
9	Foot over bridge	50/ 30/ 20
10	Other service buildings inside Railway station area	200 for SM's office for scale/category I, II, III stations

(E) DESIRABLE AMENITES AT VARIOUS CATEGORIES OF STATIONS

E (1) Desirable Amenities at various Categories of Non-Suburban Stations

Sl. No.	Amenities	STATION CATEGIRY					
		NSG1	NSG2	NSG3	NSG4	NSG5	NSG6
1	Retiring room	Yes	Yes	Yes	Yes[1]		
2	Waiting room (with bathing facilities) Upper Class 2nd class Separate for ladies (combined upper and 2nd Class)	Yes Yes Yes Yes	Yes Yes Yes	Yes[1] Yes[1] Yes[1]	- Yes -	- Yes -	- - -
3	Clock room	Yes	Yes	Yes	Yes	-	-
4	Enquiry Counter	Yes	Yes	Yes	-	-	-
5	NTES	Yes	Yes	Yes	Yes		
6	IVRS	***Yes***	***Yes***	***Yes***	***Yes***	Yes	-
7	Public Address system/computer based announcement	Yes	Yes	Yes	Yes	Yes	-
8	Book stall /other of essential goods	Yes[2]	Yes[2]	Yes[2]	Yes	Yes	-
9	Refreshment room	Yes	Yes	Yes	Yes	-	-
10	Parking /circulatory area with lights***	***Yes***	***Yes***	***Yes***	Yes	Yes	
11	Washable apron with jet cleaning	Yes	Yes	Yes	Yes	-	-
12	Electronic Train indicator board indicator	***Yes***	***Yes***	***Yes***	Yes	-	-
13	Touch screen Enquiry system	Yes	Yes	Yes	Yes	-	-
14	water vending machines	Yes	Yes	Yes**	Yes**	-	-
15	Escalators	Yes	Yes	Yes[3]	-	-	-
16	Travellator	Yes	Yes	Yes[3]	-	-	-
17	Signage (standardized)	Yes	Yes	Yes	Yes	Yes	-
18	Modular catering stalls*	Yes	Yes	Yes	Yes	Yes	-
19	Automatic vending Machine	Yes	Yes	Yes	Yes**	Yes**	-
20	Pay & Use Toilets on end platforms & circulating area.	Yes	Yes	Yes	Yes	Yes	Yes
21	Provision of cyber cafes	Yes	Yes[4]	-	-	-	-
22	Provision of ATMs(preferably with ticketing facility)	Yes	Yes	Yes	Yes	Yes**	Yes**
23	Provision of at least one AC VIP/Executive Lounge	Yes	Yes	-	-	-	-
24	Food Plaza	Yes	Yes	-	-	-	-
25	Train coach indication system	Yes	Yes	-	-	-	-
26	CCTV for announcement & security purpose	Yes	Yes	-	-	-	-
27	Coin operated Ticket vending Machines	Yes	Yes	Yes	Yes	-	-

Sl. No.	Amenities	STATION CATEGIRY					
		NSG1	NSG2	NSG3	NSG4	NSG5	NSG6
28	Pre-paid Taxi service	Yes	Yes	-	-	-	-
29	Access control systems	Yes	Yes	Yes	-	-	-
30	Bio-toilets /waterless toilet/urinals	Yes	Yes	Yes	Yes	Yes	Yes
31	Bottle crushers, Bending Machined	Yes	Yes	Yes	-	-	-
32	Wi-Fi	Yes	Yes	Yes	Yes	Yes	-
33	Second entry with booking office.	Yes	Yes	Yes	Yes	-	-
34	waiting hall for senior citizen & Divyangjan	Yes	Yes	-	-	-	-
35	Wheel chair lifting devices/ ramps	Yes	Yes	Yes	-	-	-
36	Water Fountain	Yes	Yes	Yes	-	-	-

Yes (in italics): Also prescribed as minimum Essential Amenity under Annex. II.

*** Should include high mast lighting wherever feasible.

® On double line sections.

* In end platforms, all stalls should be preferably embedded in walls.

** Optional items vide Board's letter No. 94/LMB/2/175 dated 16.1.05.

Numbered subscripts:

1: Upgradation to be taken up preferably under public-private partnership schemes. Retiring rooms need not be provided at 'NSG/5-6' category stations.
2: Should provide for minimum essential medicines.
3: Escalators at NSG1, NSG2 & NSG3 category stations and stations of tourist importance.
4: Subject to availability of space & feasibility.
5: Subject to availability/clearance from local authorities.

E (2) Desirable Amenities at Suburban categories Stations (SG/1-3)

Sl. No.	Amenities	Station Category		
		SG1	SG2	SG3
1	Retiring room	-	-	-
2	Waiting room (with bathing facilities) Upper Class 2nd class Separate for ladies (combined upper and 2nd Class)	Yes[1] Yes[1] Yes[1]	Yes Yes Yes	- Yes Yes
3	Cloak room	Yes	Yes	Yes
4	Enquiry Counter	Yes	Yes	Yes
5	NTES	Yes	Yes	-
6	IVRS	Yes	Yes	Yes
7	Public Address system/Computer based announcement	Yes	Yes	Yes
8	Book stall /other of essential goods	Yes[2]	Yes	Yes
9	Refreshment room	Yes	Yes	Yes
10	Parking /circulatory area with lights***	Yes	Yes	Yes
11	Electronic Train indicator board indicator	Yes	Yes	Yes
12	Touch screen Enquiry system	Yes	Yes	Yes
13	Water vending machines	Yes	Yes**	Yes**
15	Escalators	Yes[3]	Yes[3]	Yes[3]
16	Travellator	Yes[4]	-	-
17	Signage (standardized)	Yes	Yes	Yes
18	Modular catering stalls*	Yes	Yes	Yes
19	Automatic vending Machine	Yes	Yes**	Yes**
20	Pay & Use Toilets on end platforms & circulating area.	Yes	Yes	Yes
21	Provision of cyber cafes	Yes[4]	-	-
22	Provision of ATMs(preferably with ticketing facility)	Yes	-	-
23	Provision of at least one AC VIP/Executive Lounge	Yes	-	-
24	Food Plaza	Yes	-	-
25	Train coach indication system	Yes	Yes	Yes
26	CCTV for announcement & security purpose	Yes	Yes	
27	Coin operated Ticket vending Machines	Yes	Yes	Yes
28	Pre-paid Taxi service	Yes[5]	Yes[5]	-
30	Second entry with booking facility (booking window / ATVN)	Yes	Yes	-
31	Water Fountain	Yes	-	-

Yes (in italics): Also prescribed as minimum Essential Amenity under Annex. II.

*** Should include high mast lighting wherever feasible.

® On double line sections.

* In end platforms, all stalls should be preferably embedded in walls.

** Optional items vide Board's letter No. 94/LMB/2/175 dated 16.1.05.

Numbered subscripts:

1: Upgradation to be taken up preferably under public-private partnership schemes. Retiring rooms need not be provided at 'SG1, SG2 & SG3' category stations.
2: Should provide for minimum essential medicines.
3: Escalators at SG1, SG2 & SG3 category stations.
4: Subject to availability of space & feasibility.
5: Subject to availability/clearance from local authorities.

E (3) Desirable Amenities at Halt Stations (HG1, HG2 & HG3 Categories)

Sl. No.	Amenities	Station Category		
		HG1	HG2	HG3
1	Waiting room (with bathing facilities) Upper Class 2nd class Separate for ladies (combined upper and 2nd Class)	- Yes[1] -	- Yes[1] -	- - -
2	Public Address system/computer based announcement	Yes	-	-
3	Book stall /other of essential goods	Yes[2]	-	-
4	Refreshment room	Yes	-	-
5	Parking /circulatory area with lights ***	Yes	Yes	-
6	Electronic Train indicator board indicator	Yes	Yes	-
7	Touch screen Enquiry system	Yes	-	-
8	Washing apron with jet cleaning	Yes*	-	-
9	Signage (standardized)	Yes	Yes	-
9	Modular catering stalls *	Yes	Yes	-
10	Automatic vending Machine	Yes	-	-
11	Pay & Use Toilets on end platforms & circulating area.	Yes	Yes	Yes
12	Provision of ATMs (preferably with ticketing facility)	Yes	-	-
13	CCTV for announcement & security purpose	Yes	-	-
14	Coin operated Ticket vending Machines	Yes	-	-
15	Bus type shelter	***Yes***	-	-

Yes (in italics): Also prescribed as Minimum Essential Amenity

*** Should include high mast lighting wherever feasible.

® On double line sections.

* In end platforms, all stalls should be preferably embedded in walls.

**Optional items vide Board's letter No.94/LMB/2/175 dated 16.01.05.

Numbered subscripts:

1: Upgradation to be taken up preferably under public-private partnership schemes. Retiring rooms need not be provided at 'HG1 to HG3' category stations.
2: Should provide for minimum essential medicines.

(M) ITEMS PERTAINIG TO COLONY AND OTHER BUILDINGS

Ref: Rly Bd.'s letter no. 2014/LMB-II/1/1dated 25-07-2014 and 2014/LMB-II/1/1 (A) dated 25-07-2014.

A. COLONY INSPECTION BY 'COLONY INSPECTION GROUP (CIG)'

1. General:

Sl. No.	Particulars	Remarks
1	Whether 'CIG' formulated as per latest instructions?	Yes/No
2	Whether 'CIG' inspection & meetings are held regularly once in THREE months?	Yes/No
3	Artisans training: Initial and refresher arranged regularly?	Yes/No
4	Whether modern tools & equipment are available with artisans?	Yes/No
5	Whether standard 'Tool kit' is available with artisans?	Yes/No
6	Whether 'Valve' operation is automised?	Yes/No
7	Whether old quarters, planned for replacement has been inspected thoroughly and it has been ensured that repair is not economical?	Yes/No

2. Items to be inspected by 'COLONY INSPECTION GROUP' (CIG):

Sl. No.	Particulars	Remarks
1	Whether Cleanliness of colony is upto mark?	Yes/No
2	Whether quarters are maintained in sound condition having structural integrity?	Yes/No
3	Whether leaky roofs are attended properly?	Yes/No
4	Whether outside door & windows are maintained properly?	Yes/No
5	Whether water supply is maintained properly?	Yes/No
6	Whether sanitation and drainage arrangements are maintained properly?	Yes/No
7	Whether repair to floors is done properly?	Yes/No
8	Whether repairs to pathways is done properly?	Yes/No
9	Whether repairs to fencing and other items is done properly?	Yes/No
10	Whether improvement of substandard quarters done?	Yes/No
11	Whether disposal of waste from colony is arranged properly?	Yes/No
12	Whether encroachment is prevented properly?	Yes/No
13	Whether cattle nuisance is prevented properly?	Yes/No
14	Whether subletting of quarters is checked & prevented properly?	Yes/No
15	Whether security arrangements for colony are proper?	Yes/No

B. Maintenance Schedule for Staff Quarters and Colony

1. Schedule for finishing items: For type II to V Quarters

Sl. No.	Particulars	Remarks
1	Whether exterior colour washing & Interior white washing including ceiling done once in a year?	Yes/No
2	Whether white washing of Kitchen & pantry done **once** in a year?	Yes/No
3	Whether painting with plaster paint, synthetic enamel, Oil bound distemper, acrylic paint and acrylic distemper done once in TWO years?	Yes/No
4	Whether polishing/painting of interior wood work and painting of steel work done once in THREE years?	Yes/No
5	Whether premix, semi dense carpeting of roads dove once in FIVE years?	Yes/No
6	Whether collection of water samples and analysis done for:	
	a. Physical & bacteriological test – Every month.	Yes/No
	b. For chemical test – Six monthly.	Yes/No

2. Schedule for sanitation items: For residential buildings and colonies:

Sl. No.	Particulars	Remarks
1	Whether cleaning and disinfection of water storage/distribution tanks & water mains done once in SIX months?	Yes/No
2	Whether cleaning of manholes/gully chambers/ inspection chambers and flushing of building sewers done once in a YEAR before monsoon?	Yes/No
3	Whether cleaning of storm water drains done once in a YEAR before monsoon?	Yes/No
4	Whether cleaning of wet drains meant to serve as quarter drains done at least once in a FORTNIGHT?	Yes/No
5	Whether clearing of rank vegetation done at least once in a MONTH during monsoon?	Yes/No
6	Whether clearing of rank vegetation done as per requirement in period other than monsoon?	Yes/No

C. CHECKLIST FOR TAKING OVER BUILDING / QUARTER AFTER CONSTRUCTION:

Sl. No.	Description of item	Remarks
	GENERAL ITEMS	
1	Whether proper drains and drain pipes has been provided for the disposal of water.	Yes/No
2	Whether the surrounding area cleared off, of unused materials and construction debris/waste etc.	Yes/No
3	Whether plinth protection has been provided for the building?	Yes/No
	INSIDE BUILDING ITEMS	
	WALLS	
1	Are there any cracks in walls?	Yes/No

Sl. No.	Description of item	Remarks
2	Are there any signs of dampness/leakage on walls?	Yes/No
3	Whether finishing of wall surface is smooth and proper?	Yes/No
FLOORS		
1	Are there any cracks in floors, skirting and dado?	Yes/No
2	Are the floors laid to proper slopes?	Yes/No
3	Is there a stagnation of water in WC, bath and verandahs?	Yes/No
4	Whether finishing of floor surface is smooth and proper?	Yes/No
ROOFS		
1	Are there any leakages in roofs?	Yes/No
2	Whether the roof tops are clear of any vegetation and Rain Water pipes are not clogged ?	Yes/No
3	Is the slope of roof proper?	Yes/No
4	Are the traps and rain water pipes proper to drain water without ponding?	Yes/No
DOORS, WINDOWS AND VENTILATORS		
1	Are all the fittings viz. locking arrangement, tower bolts, pull bolts, door stoppers, hooks, stays and hinges etc. are provided & functioning properly?	Yes/No
2	Whether quality of wood is as per specification?	Yes/No
3	Whether surface of frame and shutter is smooth?	Yes/No
FINISHING		
1	Is the plastering of walls and ceiling satisfactory, smooth and free from cracks and other defects?	Yes/No
2	Is the painting of walls / doors and windows proper?	Yes/No
WATER SUPPLY AND SANITATION		
1	Is there any leakage in the sewer lines, drainage pipes etc.?	Yes/No
2	Are flushing cisterns, wash basins etc. correctly fitted and working properly?	Yes/No
3	Are the covers of manholes, gully traps and floor traps etc. provided?	Yes/No
4	Is the slope of sanitary pipes proper?	Yes/No
5	Is the condition of water overhead tank proper including float valve & cleaning of tank?	Yes/No
6	Any other deficiency noticed in the building	Yes/No

(N) ITEMS PERTAINING TO LAND MATTERS

Sl. No.	Description of item	Remarks	Reference
1	Whether village-wise land records i.e. Jamabandi, Shajra, and mutation documents available?	Yes/No	Para 806 (a) to (c) of IRWM for Land Record. For micro filming Para 806 (d)
2	Whether land plans are authenticated?	Yes/No	
3	Whether authenticated land plans are available and micro filming done.	Yes/No	
4	Whether land boundary post is being provided at 50 m on either side?	Yes/No	Para 808 (v) of IRWM
5	Whether within the boundary, the demarcation of offsets is done at change point?	Yes/No	Para 809 (b) of IRWM
6	Whether land boundary post is visible?	Yes/No	Para 813 (a to e) of IRWM
7	Whether land boundary post/boundary wall is missing/damaged?	Yes/No	
8	Whether periodical verification of land boundary is being done?	Yes/No	
9	Whether land boundary verification registers are available?	Yes/No	
10	Whether there is any encroachment of jhuggies / permanent structures?	Yes/No	Para 814 (C) of IRWM.
11	Is the encroachment register maintained?	Yes/No	Para 814 (e & f) of IRWM & Ann 8.2
12	Whether any encroachment has been dealt under Public Premises (Eviction of Unauthorized occupants) Act (PPE Act)?	Yes/No	
13	Whether any action is being taken for removal of encroachment?	Yes/No	
14	Whether there is any case registered in the Court regarding encroachments?	Yes/No	Para 814 (IV) of IRWM
15	Whether there is any unauthorized Religious structure in the premises?	Yes/No	Para 818 of IRWM
16	Whether Religious structure register is maintained?	Yes/No	
17	Whether track crossing register is maintained?	Yes/No	-
18	Whether there is any unauthorized track crossing?	Yes/No	-
19	Whether realization of way leaves charges done?	Yes/No	Para 1033 of Engg. Code.
20	Whether validity period of any track crossing expired?	Yes/No	
21	Whether agreements are available for track crossing?	Yes/No	
22	Is there any private siding?	Yes/No	Para 1830 and 1139 of Engg. Code. OR refer liberalized siding policy vide boards various letters.
23	Are there any commercial plots?	Yes/No	Para 821 (c) of IRWM.
24	Are there any Shops/Tehbazari?	Yes/No	

Sl. No.	Description of item	Remarks	Reference
25	Whether license fee has been updated for the current year?	Yes/No	Para 821 (f) of IRWM.
26	Whether license fee has been updated on the basis of market value of land after 5 years?	Yes/No	Refer Rly Bd updated policy.
27	Whether land is licensed to Railway Staff for Grow More Food (GMF) purposes?	Yes/No	No. 2009/ LML/ 16/3 dated 16/07/2010
28	Whether any land is licensed to Container Corporation of India / International Container Depot (CONCOR ICD)?	Yes/No	Refer Rly Bd updated policy.
29	Whether execution of land license agreement has been done for all cases?	Yes/No	
30	Whether validity of any agreement has expired?	Yes/No	
31	Whether any tree is infringing signal /OHE / Track?	Yes/No	Para 715 of IRWM
32	Whether matured trees are being processed for sale?	Yes/No	Para 721 of IRWM.
33	Whether tree register is maintained?	Yes/No	Para 720 of IRWM
34	Whether any action has been initiated for de notification of protected forest?	Yes/No	Para 721of IRWM.
35	Whether master data entry in land module has been done or not?	Yes/No	N0.2014/LML-II/2/3 dated 28/07/2014

(O) STEEL STRUCTURES IN WORKSHOPS, RUNNING SHEDS AND PLATFORM COVERS IN WHICH ROOF TRUSSES ARE FIXED TO BUILT UP STANCHIONS

Ref.: Para 229 of IRWM

Sl. No.	Description of item	Remarks
1	Whether truss/column is in sound condition?	Yes/No
2	If not, whether any remedial action is being taken?	Yes/No
3.	Whether the timber is decaying?	Yes/No
	If so, whether any remedial action is being taken?	Yes/No
4	Whether bed blocks or pedestals are in sound condition?	Yes/No
	If not, whether any remedial action is being taken?	Yes/No
5	Whether all fixtures are intact in bed blocks or pedestals?	Yes/No
	If not, whether any remedial action is being taken?	Yes/No
6	Whether the condition of paint is good?	Yes/No
	If not, whether any remedial action is being taken?	Yes/No
7	Whether date of painting is mentioned on the structure?	Yes/No
8	Whether corrosion of steel is taking place?	Yes/No
	If so, whether any remedial action is being taken?	Yes/No
9	In the case of steel work built into masonry, such as tie rods of arched buildings, whether any corrosion is apparent near the masonry?	Yes/No
	If so, whether any remedial action is being taken?	Yes/No
10	Whether the condition of rivets, bolts and tie rods particularly of water storage tanks are in sound condition?	Yes/No
	If not, whether any remedial action is being taken?	Yes/No
11	Whether any cracks have developed in cast iron tank plates?	Yes/No
	If so, whether any remedial action is being taken?	Yes/No
12	Whether any deformation of the structure has occurred?	Yes/No
	If so, whether any remedial action is being taken?	Yes/No
13	Whether anchor-bolts are tightly fastened to foundations & bearings?	Yes/No
	If not, whether any remedial action is being taken?	Yes/No

(P) CI/WI/PRESSED UP STEEL WATER TANK & STAGING and FLOOD LIGHT TOWERS (Ref: Para229 IRWM)

S. No.	Description of item	Remarks
1	Whether any crack has developed in CI/WI/Pressed up steel/tank plates?	Yes/No
	If so, whether any remedial action is being taken?	Yes/No
2	Whether corrosion in steel is taking place?	Yes/No
	If so, whether any remedial action is being taken?	Yes/No
3	In the case of steel-work built into masonry, such as tie rods of arched buildings and roof trusses, whether any corrosion is apparent near the masonry?	Yes/No
	If so, whether any remedial action is being taken?	Yes/No
4	Whether the condition of rivets, bolts and tie rods particularly of water storage tanks are in sound condition?	Yes/No
	If not, whether any remedial action is being taken?	Yes/No
5	Whether bed blocks or pedestals are in sound conditions?	Yes/No
	If not, whether any remedial action is being taken?	Yes/No
6	Whether all fixtures are intact in bed blocks or pedestals?	Yes/No
	If not, whether any remedial action is being taken?	Yes/No
7	Whether the condition of paint is good?	Yes/No
	If not, whether any remedial action is being taken?	Yes/No
8	Whether date of painting is mentioned on the structure?	Yes/No
9	Whether anchor-bolts are tightly fastened to foundations & bearings?	Yes/No
	If not, whether any remedial action is being taken?	Yes/No
10	Whether any deformation of the structure has occurred?	Yes/No
	If so, whether any remedial action is being taken?	Yes/No
11	Whether decay in timber is taking place in case of wooden staging?	Yes/No
	If so, whether any remedial action is being taken?	Yes/No
12	Whether any sign of leakage has been detected in water tank?	Yes/No
	If so, whether any remedial action is being taken?	Yes/No

(Q) WATER SUPPLY INSTALLATION
(Ref.: IRWM Para- 532, 537, 546 & 554)

1. List of Check Points on Quality of Water supply – General:

Sl. No.	Description of item	Remarks
1	Are inspections of the various water supply installations being done as per IRWM i.e. Once in THREE months by ADEN and joint inspection once in a year by SSE/W with MECH/ELE dept.?	Yes/No
2	Are records of inspections of the various water supply installations being maintained properly in registers?	Yes/No
3	Whether storage tank (Underground & elevated) is clean and date of cleaning is mentioned?	Yes/No
4	Whether tube well is protected against contamination from surface water?	Yes/No
5	Whether water samples tested from filtration plant every MONTH?	Yes/No
6	Whether water samples tested for chemical examination SIX MONTHLY (or once before & after monsoon)?	Yes/No
7	Whether samples collected as per specified manner?	Yes/No
8	Whether collected samples sent to medical department or lab duly leveled, sealed without delay?	Yes/No
9	Whether leakage detection test conducted?	Yes/No

2. Inspection of Chlorination Plant

Sl. No.	Description of item	Remarks
1	Whether chlorination plant is in good working condition?	Yes/No
2	Are records like log book, and plant failure register of the chlorination plant properly maintained and up to date?	Yes/No
3	If the plant is maintained and operated through contract, are all records of operation and maintenance properly maintained?	Yes/No
4	Are plant failures promptly attended?	Yes/No
5	If the plant is maintained and operated departmentally, are spares of all critical components in stock?	Yes/No
6	Whether chlorine demand of the raw/untreated water is being regularly tested?	Yes/No
7	Whether equipment/disinfectant chemicals in chlorination plant are stored properly in safe condition?	Yes/No
8	Whether proper record of date of receipt, date of testing and date of consumption of the hypochlorite solution maintained?	Yes/No
9	Are all components of chlorination plant functioning properly including proportionate dozing system (if provided)?	Yes/No
10	Whether contact period of 30 to 60 minutes is maintained ?	Yes/No
11	Whether residual chlorine of 0.2 ppm is available in normal condition?	Yes/No

(R) RAIN WATER HARVESTING (RWH) SYSTEM

Sl. No.	Description of item	Remarks
1	Whether new buildings which are being provided with suitable RWH structures as per local bye laws?	Yes/No
2	Whether recharged water is silt free and properly maintained?	Yes/No
3	Whether well/trench used for RWH is being cleaned periodically?	Yes/No
4	Whether the recharge shafts for RWH are being constructed 10-15 m away from the building for the safety of building?	Yes/No
5	Whether there is an approved plan for RWH installation?	Yes/No
6	Has the RWH system been checked before monsoon?	Yes/No
7	Has the RWH system been checked after monsoon?	Yes/No

Chapter - 5

Inspection at New construction Site

(A) Infringement to Running Line by Construction Machinery Vehicles

SN	Items to be checked.	Remarks	Reference
1	Vehicle to ply minimum generally 6m clear from center line of track, if required, upto 3.5 m only with the permission of Engineer–in–charge. Has this been done?	Yes/No	Para 819 of IRPWM, For dimensional details refer Ann-II of PCE/ECR circular no. 16/2010/Track
2	If required to work within less than 3.5 m clearance from the center line of track, whether the presence of authorized Railway Inspector is ensured?	Yes/No	
3	Whether proper barricading or 150 mm thick line (of lime) marking at a distance of 3.5m from the centre of track has been provided or not?	Yes/No	
4	Is nominated vehicles is plying between sunrise & sunset?	Yes/No	
5	Whether trained drivers are being utilized and the presence of at least one flag man and one supervisor certified for such work?	Yes/No	Para 819 of IRPWM, For dimensional details refer Ann-II of PCE/ECR circular no. 16/2010/Track
6	If night working is done, whether it has been permitted by AEN/XEN in writing any by deputing one inspector?	Yes/No	
7	Whether walkie talkie sets or mobile phones have been provided at the site of work?	Yes/No	
8	Whether S&T and electrical staff have been informed before starting of work along the track?	Yes/No	
9	Whether vehicle / tractor drivers trained by the Railway Officers/ Supervisors to work along the track as per safety guide lines?	Yes/No	
10	For night working whether sufficient light has been provided?	Yes/No	

(B) Work in /near Electrified Territory

SN	Items to be checked.	Remark	Reference
1	Whether work is being done in presence of authorized Over Head equipments (OHE) staff with proper power block & permit to work?	Yes/No	Para 664 (2) of IRPWM
2	If track bonds, feeder connection etc. have been disturbed, whether they have been re-connected properly after completion of work?	Yes/No	
3	Whether mast foundation is exposed and track level raised/slewed beyond permissible limits?	Yes/No	
4	Whether a minimum distance of 2 m has been maintained between live OHE wire and body parts of the worker or tools or metallic supports, etc.?	Yes/No	

(C) Precautions within station Premises

SN	Items to be checked.	Remark	Reference
(i)	Whether contractor has ensured proper barricading and protection at the site of work?	Yes/No	Para 34(3) & 34(4) of GCC
(ii)	Whether sufficient free space for movement of passenger traffic provided, to avoid any untoward incidents for all works done within station premises, especially on passenger platform?	Yes/No	
(iii)	Whether proper signage has been provided?	Yes/No	

(D) <u>Check list for Track Ballast</u>:

SN	Items to be checked.	Remark	Reference
i	Whether the track ballast is hard, well graded machine crushed and angular in shape.	Yes/No	Specification of ballast as per IRS GE-1, July 2016
ii	Physical properties of the ballast :	Yes/No	
	a. Is the abrasion value of the track ballast done is less than 30%	Yes/No	
	b. Is the impact value of the ballast is less than 20%	Yes/No	Specification of ballast as per IRS GE-1, July 2016
	c. Is Water absorption in less than 1%	Yes/No	
	(In exceptional cases on technical and economic ground, can be relaxed up to 35% and 25% respectively by CTE in open line and CAO/C for construction projects.)		
iii	**Size and gradation:**		
	Is the ballast satisfy the following size and gradation:	Yes/No	
	a. Retained on 65 mm Sq. mesh sieve 5% Maximum	Yes/No	
	b. Retained on 40 mm Sq. mesh sieves 40% - 60%	Yes/No	
	c. Retained on 20 mm Sq. mesh sieve Not less than 98% for machine crushed. Not less than 95% for hand broken.	Yes/No	
	Oversize Ballast:		
	a. In case retention on 65 mm square mesh sieve exceeds 10%, the stack shall be rejected. b. In case retention on 40 mm square mesh sieve exceeds 70%, the stack shall be rejected.		
	Under size Ballast: The ballast shall be treated as under size and shall be rejected if:-		Specification of ballast as per IRS GE-1, July 2016
	a. Retention on 40 mm sq. mesh sieve is less than 40%		
	b. Retention on 20 mm sq. mesh sieve is less than 98%		
	(For machine crushed) or 95% (for hand broken.) Has this been done?	Yes/No	
iv	**Stack measurement**		
	Stacking if done on a neat, plain and firm ground with good drainage. The height of stack is not less than 1 m except in hilly area where it may be 0.5 mm. Cubical content of each stack should normally be not less than 30 cum in plain area and 15 cum in hill area.	Yes/No	
v	The screen for sieving the ballast shall be of square mesh. If Mesh in not less **100 X 70 X 10** cm (LXBXH). The following tolerances in the size of the hole for 65, 40 and 20mm nominal size shall be permitted.		Specification of ballast as per IRS GE-1, July 2016
	a. 65 mm sq. mesh plus/minus 1.5 mm		
	b. 40mm sq. mesh plus/minus 1.5 mm		
	c. 20mm sq. mesh plus/minus 1.0 mm		

(E) <u>Form Work in Concreting Work</u>:

Sl. No.	Items to be checked.	Remark
1	Whether proper temporary support e.g. shoring, timbering and strutting has been checked before concreting works?	Yes/No
2	Whether stability and safety of all structures, excavation and works has been ensured?	Yes/No
3	Whether form work is water tight?	Yes/No
4	Whether dimensions are checked and found correct?	Yes/No

(F) <u>Box Pushing Work</u> :

Sl. No.	Items to be checked.	Remark
1	Whether box pushing work is to be done in parts of 10 to 20 cm to minimize disturbance to track?	Yes/No
2	Are trains permitted to pass during actual box pushing operation?	Yes/No
3	Whether track parameter has been checked and recorded before the passing of first train?	Yes/No
4	After close of box pushing work whether the speed of first train passed at speed of stop dead and 10 kmph and subsequent trains were upto 30 kmph?	Yes/No
5	Whether track parameter has been checked after each round of box pushing by the supervisor In-charge before leaving site?	Yes/No
6	Whether posting of proper look out Man with banner flags and other protection equipment has been ensured when box pushing is not in progress?	Yes/No

Chapter - 6

Human Resources Management

1. The Service Records/Leave Records of the Engg. Staff should be got completed & updated (by the in-charges) every year.
2. A Grievance Register should be maintained in every Gang/Workshop/Office and it should be scrutinized by Inspecting officials.
3. No Track Maintainer should ordinarily be required to visit office of SSE/P.Way, ADEN or Division, for chasing their legitimate dues. They should be addressed promptly by the system.
4. Long absentees (>3 months) should be taken up under D&AR.
5. Habitual absentees be first counseled or else, taken up under D&AR, if they do not mend their ways. However, this tool be used sparingly and effectively.
6. Punishments should be deterrent & quick. Similarly, Rewards should be liberal.
7. The Selections, Suitability, Upgradation, MACP etc. for the staff should be processed timely. A Calendar of selections should be prepared before start of the year (either at Division or at ADEN level) to decide these matters in time.
8. Training is must as per schedule for all categories. Ensure calendar and participation in training schools to refresh knowledge.
9. Field Workshops, Seminars etc. should be carried out for educating the workforce of latest developments, maintenance practices.
10. Sending the Safety Category Staff for PME, before due date, and ensuring their attendance should be monitored.
11. Railway Board has prescribed several benefits to Track maintainers. They need to be given regularly.
12. Productivity of workforce, as per norms, be cross checked occasionally.
13. Listen to the workforce during Inspections. They may give you some better ideas.
14. Maintain unbiased relationship with Unions. After all, you cannot do everything they demand, but you can certainly do something.
15. Always praise your subordinates in Public, but reprimand in Private only.
16. The maintenance of Gang quarters be specifically looked into by the SSE/Works, especially the essential amenities like doors, windows, water supply, leakages, drainage etc.

Chapter - 7

Preparation for accompanying Inspections of Higher Officials

1. The speed restriction/Caution order issued be kept in front during Rear Window. You should have the planning to relax/remove the TSRs along with Target dates.
2. Deployment of Gangs enroute, location & type of work being done be also kept in front.
3. Location of Sectional SSE/JE (P. Way) Trolleys be known to you on the day of inspection.
4. Carry the following information:
   - Progress of track renewal /other important works.
   - Asset failure management plan.
   - Arrears of maintenance Vs updated progress.
   - Plan for improving the running quality, with details Repeated Bad locations Vs Plan of Action.
   - TMS note book with "DUMP" of last inspections. Never give excuse of non-availability of document, connectivity not available etc.
5. Normally, the inspections are announced in advance. A quick look at the section before helps you to avoid surprises.
6. Any Important and Good work done in recent past be (separately) shown/briefed to the inspecting officer.
7. Assistance required (after consultation with Sr.DEN) be also listed out. The breakup of the utilization of Trackman & other resources be also sought.
8. Speak truth. Do not try to bluff or guess. Admit politely, if you are not aware of any details. Normally, the inspections are for System improvement.
9. You should also carry your own (diary) inspections done in that particular section along with current status of compliance. (Keep a hard copy).
10. Know your section well, including the other features (city, geography, industry or any infrastructure work in progress which is visible from running train to the inspecting officer).

Chapter - 8

Accident Management

1. Make efforts to analyze, last 3-4 years of accidents on your subdivision.
2. Identify, the weak areas.
3. Make action plan to Improve yards. Those which are HQ of ADEN & SSE/P.Way (in-charge) be covered first along with other weak yards.
4. Pool the available resources - 4Ms i.e. Men, Machine, Money & Materials for improving maintenance. Assistance be sought from Sr. DEN for the short falls in these.
5. Safety 1st rules be followed as prescribed by one & all. Assurance be taken for the important ones from the ground staff.
6. In case of an unfortunate accident- Be the first officer to reach the site and take command in the priority: Rescue, Relief & Restoration.
7. Keep one SSE/Works for the management of labour arriving from different directions. He should note down Name of supervisor (Mobile No.) & No. of men arrived at site.
8. Arrange for Tentage and light refreshment (Biscuits etc.). Water Tanker in case of restoration is likely to take more than 12 Hrs.
9. Earthmoving machines like JCB, Poclain and Heavy-duty Road cranes can be requisitioned for restoration of traffic keep their Mob. Nos. handy.
10. Inspect the site at least 1 Km in rear to identify any clues. Take photos, preserve clues and relay to the Sr.DEN (Before his arrival).
11. Call expert SSE/P.Way(s) for the measurement of Rolling stock, duly trained from IRICEN. These names are normally known in the division.
12. Arrange for food for the Trackmen adequately through Commercial Deptt. or through your own resources.
13. After carefully scrutinizing of site, formulate the mechanism of derailment. Feel feel free to have discussion telephonically with Sr.DEN or even with HQ (CTE) till their arrival (or Engg. HOD) to the site.
14. Chronology be tried to be maintained from first information to the start of 1st train. (after restoration). Ensure safe passage of 1st Train from site.
15. TMS can provide you, important information about the location of the accident site. This is taken out by Engg. Controller/MTS of the division or HQ.

Chapter – 9

Quality of Works

1. Familiarize yourself first about the works w.r.t. Specifications.
2. Keep set of drawings & study them. An Engineer should have an Eye for the drawing.
3. Read Contract conditions both G.C.C. & Special Conditions carefully. Enforce them.
4. Immediately after award of work, ask "Program of Work" from the contactor, with Milestones for each important stage of work. During execution of work, the progress of work should be recorded with reference to the "Program of Works" and recorded.
5. There should be a Competent Supervisor from the contractor at each work site, duly authorized by you.
6. Get all the relevant records maintained by supervisor.
7. Carry out test checks of measurements (of items what you want, not what your SSE tells you) as laid down.
8. Work without BIAS towards anybody/agency.
9. The necessary approvals to all the Material being used & Processes be accorded in the register maintained (by SSE/Works).
10. Each Zonal Contract- Work order should have a date of completion indicated and maintain Site order book for each work order.
11. Carry out reviews regularly of contracts, say monthly, for Physical/Financial progress OF Work as well as Finalization of contracts (paying final bill and releasing Security Deposit).
12. Ensure cash flow to the Agencies is maintained for the work done by them.
13. Surprise checks are necessary at work sites.
14. Adequacy of Labour, artisans & supervisor of the agency be judged & record maintained at site for timely completion.
15. Inculcate habit among SSEs to stand at site for ensuring quality of both Material & Process.
16. Look for the following in the buildings/staff Quarters works:
    - Leakage/Dampness – Cause be located first and remove the cause
    - Erratic or poor Quality of water supply.
    - Improper drainage around the block.
    - Broken outside doors/Windows.
    - Proper anchorage of roof sheets (with J-Bolts as per drawing).

Chapter – 10

Interaction with Traffic Department

Most of the working of an Open Line Engineer is linked closely with running of trains & hence with Traffic Department. Therefore, practical tips are given as under:

(A) Traffic Blocks

1. Ask for "adequate" duration of blocks. CE's/Circular or Railway Board Instructions are available are available on this. For example, Minimum 70/90 Minutes for welding of 1/2 joints respectively.
2. Pre-block activities be completed.
3. Arrange full complement of 3Ms (Material, machine & men) for the block.
4. Sanction of block be confirmed.
5. Protection of each work site be ensured.
6. No block bursting.
7. Force the block, if track is "Unsafe", along with protection of site.

(B) Management of Engineering Restrictions(s)

1. Do surprise check for the Caution Order issued in respect of MRS - Mileage, Reasons & Speed. (with the driver of the Train). Sometimes these are wrongly issued.
2. Planned SRs require adequate preparation for 3 Ms.
3. Emergent SRs- Once imposed be planned for early relaxation.

(C) Unloading of DMTs

1. Adequate block be demanded.
2. Commensurate progress be ensured.
3. Avoid/check infringements to SOD after unloading of any P. Way material.
4. Arrange adequate labour (above & below DMTs). Personal Safety of labour be ensured.
5. Ballast DMTs - Excess Ballast unload on curves be cleared. Check rail gaps be cleared. Ballast need to be cleared of rail head after unloading. Tendency for emptying the residual ballast in yards be curbed because this chokes the drainage.
6. Sleeper DMTs - Check if sleepers are secured properly or not before departure of the DMT from station. A drawing has been issued by HQ.
7. Watch the movement of DMTs, through your sub-division for timely clearance.

(D) Suspension of a line (Track)

1. Either reduce the speed or even suspend the traffic on the track if considered unsafe.
2. Inform the Sr.DEN (immediately) along with reasons for making the line "unsafe".
3. Goods lines which are full of muck, unloaded dust from wagons cover the fittings & even Rail head. Stop this tendency. The commercial department is responsible for clearance of tracks in Goods Sheds through their own agencies.

(E) Movement of Track Machines

1. Watch the movement through & timely.
2. Track machines be brought back to the base station (siding) timely so that machine staff takes adequate rest.
3. The nominated siding or line should have arrangement of Light, Water & Toilet facilities for machine staff.
4. Protection of track machine even during blocks is also to be done by the SSE/P.Way.
5. Machine Operator should have Route Learning of the section (under movement).

Chapter – 11

Miscellaneous

1. Maintain "TO DO List" & Review in evening (before leaving office). 60-70% compliance is acceptable in the initial stage of posting.
2. Follow POSDIC - Planning, Organizing, Scheduling, Directing, Implementing & Compliance/ Completion in every sphere of your life & working.
3. DIRFT - DO It Right First Time for any activity to avoid repetition.
4. Use good but Simple Mobile phone. While in office, use Railway or DOT. Avoid mobile.
5. Read Delegation of Powers - SOP including that of your Boss (Sr.DEN). Use them fully.
6. Mix up with other officers including their families in Social gatherings including Club evenings. Informal meetings with divisional officers - helps in work, your own development. (both Personal & Professional).
7. Take care of your own health & family. You have difficult duty to perform.
8. Know local SDM, SP & Other State officers for better coordination during your working. It helps your own subdivision.
9. Your official vehicle should always be in good fettle.
10. Learn the Management of Self (Time). This is VAST subject.
11. Nothing is impossible. Learn to say, I'm Possible.
12. Think out of Box. There are always (n+1) solutions to any problem. The (+1) solution is not seen easily. It remains hidden. Identify it.
13. Learn the Policy of "TAPPERS & LISTENERS" i.e. give clear instructions to your juniors the way you want them to listen (and work) not the way you think they will listen and follow. Cross check the implementation of your instructions.
14. Well Organized and Clean office helps to improve efficiency.
15. In case of doubt, write down your mind on the file before arriving at the decision making. Sometimes, you may go wrong- Do not worry, somebody (above you) will correct it.
16. You may face jolts, problems but do not get disheartened. It should not guide the future. Face the problem "Head On". Start deriving the pleasure in small successors of Big Project or Processes.
17. Always think positive. Attitude does make a difference.
18. You may never get all the PPP together of your choice i.e. Place, Post or Promotion. Accept it normally, unless there are compelling reasons.

Unions: Some Tips how to tackle them-

1. Do not align yourself to any of the Recognized Unions (if more than one). Remain UNBIASED.
2. Be a good listener (during informal meetings). Take small notes during any meeting with Union office Bearer. You may not give reply immediately but politely tell them to look into & come back.
3. Solve the genuine issues - like pertaining to establishment related, small maintenance/ repairs of quarters/offices etc. promptly.
4. Those issues beyond your powers- Discuss with your Sr.DEN (or else refer with your comments and recommendations).
5. In the next meeting - Give a brief feedback to the office bearer of the last agenda/discussion.
6. Control your Zonal Work Orders in such a way that basic repairs of quarters are attended to. Money is limited; do not spend on fancy items.

7. Invite the Unions, Associations on small occasions/functions so that they also feel part of the Team. They feel happy.
8. Use them the feedback given by them judiciously. Sometimes they can provide you a good feedback of your subdivision.
9. DO NOT AVOID THEM. If you are busy, tell them so & give time/date for giving them Audience. Most of the time, your own staff is office bearer(s) and they understand your limitations.
10. Send brief but factual reply to PNM items received from division timely.
11. D&AR cases - Never discuss this as PNM/Informal meeting item. Say 'No' politely to them. However, the concerned employee should be given personal hearing to redress his grievance to the extent possible.
12. Give respect to the office bearer even if he may be Khalasi (in your Sub- division). He is elected one & represents a group/branch.
13. Show Empathy with the aggrieved party.
14. Your reputation flows through these Unions/Associations.
15. Do maintain their authorized allotted branch offices in good shape (they are supposed to pay some token rent/electricity bill etc. This is also mentioned on the allotment letter issued by Sr. DPO).

Vigilance Audit Checks:

1. They look for System failures, procedural irregularities.
2. Take these as Professional Hazards & unavoidable ones.
3. Do not be afraid of such checks.
4. You and your team can avoid any such report against, if intentions are clear, fair and transparency seems to have been shown by the individual.
5. In case of doubt for complying the orders of a Senior, you may politely seek repeat orders/guidance. Most of the time, no wrong/Incorrect orders are given by your Seniors to you.