dØhV Lyhij jyiFk dk vuj{k.k

Maintenance of Concrete Sleeper Track

All concrete sleeper tracks are required to be maintained by heavy duty on track tampers. In accordance with the Rly. Bd.'s L. No. 2007/Track III/TK/7/Pt., dt. 16.01.08, the tamping guidelines for through attention and spot attention of a section should be followed.

A VfEix ifØ;k@ Tamping Operations

The important items of attention for machine tamping are as under;

A.1 io&VfEix ifØ;k @ Pre-tamping Operations

(a) Shallow screening of pumping joints.

(b) Recoupment of Ballast.

(c) Replacement of unserviceable sleepers, missing/broken fittings.

(d) Squaring of sleepers, Gauging and Gap adjustment.

(e) Clearing of ballast from top of the sleepers to make them visible to the operator of machine.

(f) Marking of super elevation and design slew on curves, lift and slews on straight. Those fixtures/ installations which cannot be removed should also be marked to be clearly visible to machine operator.

(g) Removal of obstructions like single rods, cable, pipes, OHE bonds/ jumpers, guard rails at the approach of bridges, joggled fishplates, wooden blocks etc. (Guard rails, Joggled fishplates at 'D' joints should be removed just before tamping).

(h) Overhauling of level crossing should be done along with tamping. Check rails should be removed just before tamping.

A.2 VfEix d nkjku ifØ;k @ During - tamping Operations

a) Recording of pre and post tamping track geometry parameters and taking suitable corrective action wherever necessary.

b) Providing a ramp of 1 in 1000 before closing the block work and at obligatory point such as girder bridges, turn- out etc.

A.3 VfEix i"pkr ifØ;k @ Post-tamping Operations

a) Fittings that might have become loose or become displaced should be reset and those broken/ misplaced should be replenished.

b) Ballast should be recouped in tamping zone and should be properly dressed.

c) In areas where DTS has not been used, hand ramming of shoulder /crib ballast should be done.

d) All the fixtures removed during pre-tamping/ tamping should be restored.

A.4 During working of machines, provisions contained in LWR manual shall be strictly followed.

B rRdky fuokj.k@[kkfe;k@ Spot Attention/ Slack Picking

For spot attention/ slack picking, multipurpose tampers and of track tampers shall be used. Where these tampers are not available, as an interim measure, the tamping may be done with the help of crow bar duly taking care that the concrete sleepers are not damaged.



C ih vkj ih jyiFk dk okf"kZd ;kstukRed j[kj[kko@ Annual Systematic Attention on PRC Track

C.1 In addition to machine tamping, the gangs will carry out annual systematic attention to track from one end of gang beat to the other during working season. This will include-

(a) jy] Lyhij] cUkuk ,o b vkj ih d Vk ykM ekiu dk ijh{k.k@ Examination of Rails, Sleepers and Fastenings including measurement of toe load of ERCs.

i) jy ,o oYM@Rails and welds should be examined for the following defects and action shall be taken as indicated below:

- Corrosion on web, foot and at underside of rails & welds- *To be cleaned and painted two coats of 100 micron thick (each layer) with anti-corrosive bituminous black paint IS 9862 with a interval of 8 hours.*
- Cracks on rails and welds- *Cracked rails or welds shall be replaced.*
- Wear on rail profile- *If necessary, rails to be interchanged and burrs, if any shall be removed.*

- Wheel burns and scabs on the rail table top- *If required, rails shall be replaced.*
- Kinks and bends in rail and weld- *Cutting and re-welding shall be done.*
- Cupped welds- *Shall be filled up or cut and re-welded.*
- High and low welded joint- *Shall be rectified by filing/ filling up or by cutting and re-welding.*

ii) ih ,l lh Lyhij]@ PSC sleepers

Sleepers shall be examined for their condition and wear in rail seat. Any crack in concrete sleeper and damage to concrete exposing reinforcement should be looked for. The damaged sleeper shall be replaced.



The end of HTS wire shall be painted with anti-corrosive bituminous emulsion paint conforming to IRS-P-30-96, if there is any sign of scaling away of paint or corrosion.

iii) c/ku@ Fastenings

Rubber pads, Liners and ERCs shall be examined to ensure that these are in good condition and appropriately fixed to hold the rails. Crushed rubber pads, broken/missing liners and ERCs shall be replaced.

Correct diving of ERCs should be ensured such that leg of the clip is flushed with end face of the Insert. ERCs and metal liners should be checked for corrosion and corroded ones should be changed.

In all operations, where ERCs are required to be removed and re-inserted, it may be advisable to clean and grease Insert and ERC and clean liner rail foot contact area before insertion. The ERCs should be removed and put back by using clip applicator and not be hammering.

iv) b vkj lh dk Vk ykM ekiu@ Toe Load Measurement of ERCs

Sample check of toe loads periodically during service shall be made by toe load measuring kit approval by RDSO. Toe load of elastic rail clip should be measured on one percent of ERCs randomly on every 100 sleepers. (*All 4 ERCs to be measured on one sleeper.*)

Initial testing shall be done once in four years or passage of 200 GMT traffic, whichever is earlier. Frequency shall be doubled in corrosion prone areas.

Subsequent testing will be done every four years or 200 GMT in normal areas and two years or 100 GMT in corrosion prone areas, whichever is earlier. However, if 20% or more of sample size record toe load below 600 kg both frequency of inspection and sample size are to be doubled. If 20% or more of sample size record toe load below 400 kg which is to be confirmed by 5% sample size, proposal of through fastening renewal shall be initiated.

The loss of toe load is reflective of condition of other elastic fastening components like Grooved rubber pads, GFN/Metal liners etc. The condition of these components along with measuring of toe loads of ERCs shall be checked to ascertain cause of loss of toe load.

v) b vkj lh dk Lugu@ Lubrication of ERCs

It should normally be carried out by Key man in a systematic manner from one to other **at** the rate of 20 sleepers per day. This will give a frequency of about 1-1/2 years**.**

In case greasing is required more frequently, gangs may be deputed for this work. This work should not be done in extreme summer and heavy rainfall. Greasing of ERCs should be done with graphite grease to IS 408-1981 Gr. 'O' specification.

At any time, Key man should not remove more than one ERC of a sleeper. The eye of the insert shall be cleaned by suitable brush. Two ERC, one from inside of one sleeper and one from outside of adjacent sleeper on same rail shall be removed and cleaned by wire brush and emery paper. After cleaning, grease graphite shall be applied to the inside surface of Inserts and leg of ERCs. Both ERCs shall be interchanged and fixed again. After fixing these two ERCs remaining two ERCs shall be tackled as above. The process is repeated for cleaning and lubricating remaining ERCs.

(b) bL;yVM tkM] ,l b t vkfn dk fujh{k.k ,o j[kj[kko@ Inspection of and attention to insulated joints, switch expansion joints etc.

(c) iy] leikj igp] ,y MCY; vkj dh "olu yEckb ,o [kjkc Qke"ku dh ifdx@ *Packing of approaches of bridges, level crossings, breathing lengths of LWRs and bad formation areas etc.*

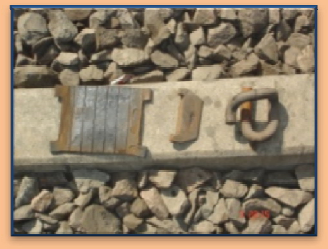
(d) jyiFk dh mFkyh Nukb@ *Shallow screening of track.*

(e) ll ,o rVc/k dh vYi ejEer@ *Minor repair to cess and bank.*

(f) fxêh dh Hkjkb ,o Mflx@ *Boxing and dressing of ballast.*



(g) {kfrxLr@xk;c jcM iM] ykbuj vkj b vkj lh dk ifrLFkkiu@ *Replacement of damage /missing rubber pads, liners and ERCs.*





C.2 e"khu vujf{kr dØhV Lyhij jyiFk dk okf'kd vuj{k.k dk;Øe fuEuor gksxk@ Annual programme for machine maintained concrete sleeper track would be as follows:

vof/k@ Period	dk;@ Work
Post-monsoon attention. (For six-seven months after end of monsoon)	Immediately after end of monsoon, attend to run down stretches in the entire gang length. Thereafter, the following schedule of work shall be followed: (i) Picking of slacks 1-2 days in a week. (ii) Remaining days shall be allotted to- • Annual systematic attention. • Overhauling of level crossings. • De-stressing of LWRs. • Spot renewals of rails, sleepers etc. • De-weeding. • Cold weather patrolling etc.
Pre-monsoon attention. (For two months prior to onset of monsoon)	(i) Picking of slacks 1-2 days in a week. (ii) Remaining days shall be allotted to : • Cleaning & repairs to side & catch water drains & cleaning of water ways. • Attention to yard drainage. • Spot renewals of rails, sleepers etc.
	• Shallow screening of specified lengths. • Hot weather patrolling.
Attention during monsoon (For three-four months)	(a) Picking of slacks as required. (b) Normal track maintenance of yard lines. (c) Cleaning, removal of loose boulders from cuttings & tunnels to ensure free flow of water. (d) Monsoon patrolling. (e) Maintenance of side and catch water drains. (f) Repair to cess and bank.

Disclaimer

The information contained in this pamphlet does not supercede any existing provisions laid down in RDSO & Railway Board instructions. This document is not statutory & instructions given in it are for the purpose of guidance only.

Our Objective

To upgrade Maintenance Technologies and Methodologies & achieve improvement in productivity and performance of all Railway assets and manpower which inter-alia would cover Reliability, Availability and Utilisation.

The contents of this pamphlet are for guidance only and are not statutory. If you have any suggestion & comments on contents of the pamphlet, please write to: Dy.Director (Civil), CAMTECH, Maharajpur, Gwalior (M.P) – 474 005

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Maintenance of Concrete Sleeper Track



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✆ : 0751-2470869, Fax: 0751- 2470841
E-Mail : dircivilcamtech@gmail.com