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LOW VIBRATION TRACK SYSTEM – LVT

Track Renewal – Track Replacement

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1. Renewal of ballasted track under traffic

The following procedure was successfully implemented in 1974 in Denmark to renew 6 km (3.8 mi) of ballasted track with the earlier non-ballasted track system comprising tie bars.

The work was restricted to 4 ½ hours per night with traffic operating normally at all other times, except for a temporary 35 km/h (22 mph) speed restriction.

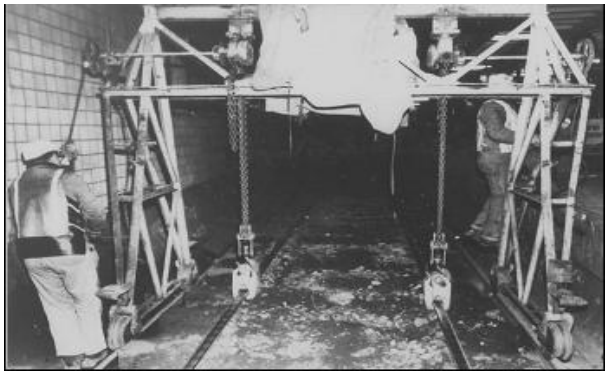
The same procedure is applicable to LVT with the only addition of insulated temporary gauge bars between the rails.

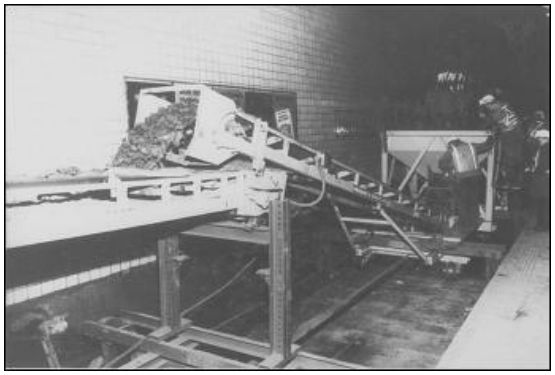
1.1 Advanced ballast removal

An advance crew excavated the ballast cribs up to the ends of the existing ties.

1.2 Old track removal

The first trackwork crew removed three 15-metre panels (45 m [150 ft] of track) per night, excavated the remaining ballast and placed roller compacted concrete on the foundation while restoring the drainage system.





1.3 Track restoration

New track panels were then installed directly on the roller compacted concrete, the rails connected and ramps shimmed at both ends, the track temporarily resting slightly below its final level.

Traffic immediately resumed.

1.4 Final adjustment and concreting

The second trackwork crew adjusted the track, verified its geometry and secured it in place with shims inserted between the rail base and the now fully cured roller compacted concrete before placing and finishing the track concrete.

The loads generated by the traffic that resumed immediately thereafter were transferred directly from the rails to the roller compacted concrete through the shims without any measurable relative movement between the rubber boots and the green track concrete below.

The upper portion of the shims was later removed and recycled forwards.