



AUSTRALIAN RAIL TRACK CORPORATION LTD

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## Engineering Practices Manual Civil Engineering

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# Sleeper Inspection for Renewal Programs

## RAP 5108

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### 1 General

This Instruction details the method of preparing a Partial Resleeping (PRS) Program each financial year, as a basis for the work program for Production teams.

The object is to determine the sleeper purchase and renewal requirements for the year to maintain sleeper condition to the minimum standards specified in ARTC standard TDS 04 and in accordance with the policy detailed in ARTC standard TMP 04.

### 2 Reason and nature of change

Document reissued as ARTC Engineering Practice Manual.

### 3 Purpose of program

The purpose of a PRS program is:-

- To maintain a safe track.
- The achieving of uniform track condition for each class of track.
- To enable accurate budgeting.

The classifications for sleeper renewals are:

1. Cyclic renewal by Production teams.
2. Raising the sleeper standard ahead of Rail Renewal teams.
3. Spot replacement by Routine Maintenance teams.

## **4 Sleeper Marking Policy**

### **4.1 Normal Sleeper Renewal by Production teams**

A sleeper inspection is to be made of the sections programmed for sleeper renewal in the coming year.

Sleepers that are considered necessary for renewal are marked and the number for each kilometre recorded.

All sleepers that experience shows will not last four years should be marked for renewal. If in doubt leave it in, provided the pattern of sleeper age and quality conforms to the standard.

Note that after removal from the track, the sleepers are again to be marked for:

- reuse at the site,
- reuse elsewhere,
- release for sale.

### **4.2 Preparation ahead of Rail Renewal teams**

This marking is to be arranged for renewal in the financial year ahead of the year the rerailing is programmed.

In addition to marking sleepers as outlined in Section 4.1, any sleeper which will not accept mechanical adzing and/or extra boring must be marked for renewal before rerailing commences.

### **4.3 Spot Replacement by Routine Maintenance teams**

If during the marking inspection of sleepers, sections are found that require tying before the arrival of the Production team, the section is to be marked and the minimum level of renewal arranged as necessary.

## **5 Method of Inspection and Recording**

### **5.1 Inspection**

The Team Manager in charge of the track section is to inspect the sleepers in company with the Length Inspector/Examiner.

The Team Manager and the Length Inspector/Examiner are to decide which sleepers are to be marked for renewal or reuse. Local opinion and knowledge will assist in this aspect.

Sleepers to be renewed are to be marked with paint as outlined in Section 6 below.

During the course of this inspection any sleepers that require immediate renewal by routine maintenance teams are to be marked with yellow chalk in addition to the paint mark and the necessary instructions given for the work to be carried out.

Special attention must be paid to the general pattern of deterioration and it may be necessary to give instructions for early renewal of every third sleeper on curves or every 4<sup>th</sup>, 5th or 6th sleeper on straights in certain locations ahead of the Production team program (as required).

A realistic approach to marking is necessary to ensure that sections of the track do not reach the state where all sleepers will eventually require renewal at the one time. This will occur if marking is too heavy or too light.

The marking should require no more than 25% renewal in each half kilometre by a Production team and preferably only 20%.

The recommended renewal rates for a 5yr cycle are:

- Track Class 1 & 2 25% Total or 5% p.a. i.e. every fourth sleeper
- Track Class 3 20% Total or 4% p.a. i.e. every fifth sleeper
- Track Class 4 & 5 15% Total or 3% p.a. i.e. every sixth sleeper

During the inspection, the sleeper spacing generally should be checked. Where sleepers have become bunched up due to rail creep, etc., it may be more economical to place an additional sleeper than to respace over some distance. An additional paint mark on the rails is to be provided in such cases.

During this inspection, sleeper plate requirements in accordance with the line policy are also to be decided.

Where rerailling is planned to be carried out in the next financial year, plating of tie sleepers must be checked.

## **6 Recording**

The number of sleepers marked each half kilometre for renewal is to be recorded during the inspection.

The recorded information is to be used in developing the District programs as arranged.

Sleeper orders are also to be made on the basis of the markings and the finally agreed program.

## **7 Paint Marking Of Sleepers For Renewal**

When a sleeper is selected for renewal, it is to be marked with a daub of paint in the four-foot and also a daub of the same coloured paint on the flange of the rail on the four-foot side of the Down rail.

The colour to be used for each year is to be decided by the Team Manager but should be different from recent years.

## 8 Implementation

It is expected that only those sleepers marked will be removed by the Production team, but if, on removal, the sleeper is found to be sound and reusable, it is to be reinserted in the track in place of a new sleeper, particularly where two or more consecutive sleepers are to be replaced in a face.

If not reinserted, reusable sleepers are to be cascaded for use elsewhere instead of using new sleepers.

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