AUSTRALIAN RAIL TRACK CORPORATION LTD

Discipline: Engineering (Track & Civil) **Category: Code of Practice**

Track & Civil Management System

Section 0

Applicability

ARTC Network wide	✓	**CRIA (NSW CRN)**	

Primary Source

Document Status

Version	Date Reviewed	Prepared by	Reviewed by	Endorsed	Approved
1.5	08 Nov 11	Standards	Standards & Procedures Administrator	Track Standards Engineer	Manager Standards

Amendment Record

Version	Date Reviewed	Clause	Description of Amendment
1.0	31 Jul 09		Implementation draft. New CoP Section.
1.1	29 Apr 10	0.1, 0.4, 0.5 & 0.6; 0.2	Implementation draft update. Title changed. Introduction, Works Management System, Reporting and Mandatory and advisory requirements clauses added; Siding configuration requirements reworded.
1.2	18 Jun 10	0.6 & 0.7	Heading changed to Mandatory Requirements and second paragraph reworded and added under new heading Interpretations
1.3	18 Jan 11		Track classification A.B,C and D amended to show “Heavy Haul Lines”, Interstate lines”, “Intrastate Lines”, and “Light Weight Lines”.. Deleted reference to Class E Lines

1.4	27 May 11	0.9	New clause on existing assets and superseded standards
1.5	08 Nov 11		Banner added regarding elements of RISSB National CoP being incorporated

This ARTC CoP has drawn on the Rail Industry Safety and Standards Board (RISSB) National Code of Practice Volume 4, Track and Civil Infrastructure, but is not identical. The ARTC CoP has been subject to Risk Assessment as required by the various State Rail Safety Regulators. The results of these risk assessments have made it necessary to deviate from the RISSB CoP in some areas. ARTC maintains traceability of the differences.

Contents

0 Section 0: Track & Civil Management System

0.1 Introduction

The Australian Rail Corporation Track & Civil Code of Practice (ARTC T&C CoP) defines mandatory requirements for design, construction and maintenance of ARTC railway infrastructure.

ARTC T&C CoP and its supporting standards and procedures take precedence over all national and international standards.

0.2 Track Classifications

Main lines are classified according to the traffic operating on them. Table 1 sets out these classifications.

Main lines include crossing loops, refuge loops and 'sidings' where operating speeds in excess of 25km/hr are possible.

a) Main line track classifications.

The nominal maximum allowable train speeds and axle load for each class of main line are as detailed in Table 1. The definitive speed and axle load conditions for all rolling stock (which may be higher or lower than the speed or nominal maximum axle shown in Table 1) is given in the Train Operations Condition Manual (TOC Manual) or Route Access Standard (RAS).

Superior e.g. XPT, rolling stock may be authorised to operate at higher speeds than shown in Table 1.

Due to their limited number locomotives may be permitted to run at higher speeds than wagons with equivalent axle loads

Table 1 – Details of the axle load speed framework

HEAVY AXLE LOAD. HUNTER VALLEY LINES

These include Islington Junction to Maitland (Dn main), Maitland to Waratah(Up main), Waratah to Islington, Maitland to Muswellbrook, Muswellbrook to Werris Creek, Muswellbrook to Ulan,

Train type	Maximum Speed (km/h)	Maximum Axle Load(tonnes)		Classifcation to AS 7630 :2010
		Locos	Wagons*	
Freight	115	22.3	19.5	115MLF19.5
	100	22.8	21	100MLF21
	80	29.3	25	80MLF25
	60	29.3	30	60HHF30
Passenger				
XPT/railcar	160	N/A		160HSP
Xplorer	145	N/A		145MSP
Diesel Haul	115	19		115MSP19

*These maximums are not permitted on all Heavy Haul Lines.

There are also some sections where higher speeds are allowed.

Refer to the RAS manual for axle load speed for each line section.

INTERSTATE LINES These include all ARTC interstate lines				
Freight	Maximum Speed (km/h)	Maximum Axle Load (tonnes)		Classifcation to AS 7630 :2010
		Locos	Wagons*	
Freight	115	22.7	21	115MLF21
	110	22.7	21	110MLF21
	100	22.8	21	100MLF21
	80	22.8	23	80MLF23
	65	22.8	25	65MLF25
Passenger				
XPT/railcar	160	N/A		160HSP
Xplorer	145	N/A		145MSP
Diesel Haul	115	19		115MSP19
These maximums are not permitted on all Interstate Lines Refer to the RAS manual for axle load speed for each line section. ** Limits on P2 forces also apply. Refer to RAS				

INTRASTATE LINES These include Gap to Dubbo, Dubbo to Goobang Junction, Ulan to Merrygoen, and the Portland line.				
Train type	Maximum Speed (km/h)	Maximum Axle Load (tonnes)		Classifcation to AS 7630 :2010
		Locos	Wagons*	
Freight	100	19	19.5	100BLF19.5
	80	22.3	19.5	80BLF19.5
	70	22.3	20.25	70BLF20
	60	22.8	20.25	
	55	22.8	23	
Passenger				
XPT/railcar	100	N/A		
Xplorer	100	N/A		
Diesel Haul	100	19		
These maximums are not permitted on all Intrastate Lines Refer to the RAS manual for axle load speed for each line section.				

LIGHT WEIGHT LINES These include the Benalla to Oaklands line				
Train type	Maximum Speed (km/h)	Maximum Axle Load (tonnes)		Classifcation to AS 7630 :2010
		Locos	Wagons*	
Freight	70	19.5	19	70BLF19
	55	22.3	19	
Passenger XPT/railcar Xplorer				
Diesel Haul				
These maximums are not permitted on all Light Weight Intrastate Lines Refer to the RAS manual for axle load speed for each line section.				

b) Siding configuration

Sidings, maximum speed 25kph, cover all tracks not specified above. As a minimum requirement the configuration for new siding construction, upgrading or maintenance are shown in Table 2. Rails may be new or used. When relaying with used rail the reportable rail wear limits shown in Section 1.1.1(b) should not be exceeded.

Unless specifically excluded axle loads permitted to operate on main lines are permitted to operate in sidings.

Table 2 - Sidings

Siding connected to track class	Rail section when upgraded kg/m	Rail type	Nominal ballast depth mm	Sleeper type	Ballast grade
Heavy Haul	53/60	Welded	250	Concrete	Standard
Interstate	47/53	Welded	150	Timber/steel/concrete	Standard
Intrastate	40/47/50/53.	Jointed or Welded	150	Timber/steel	Standard/fine

Sidings connected to Light weight Lines should be of a similar standard to the main line.

0.3 Life cycle process

The Code follows the lifecycle for each component of the track and civil infrastructure.

The Code contains the new design and construction standards for the components, It is noted that the existing track may not have been constructed to these design and construction standards. The Code gives guidance regarding extra controls that can be introduced to address this; for example where there is lighter rail, a control can be higher maintenance for weld geometry (ie rail grinding)

The inspection and assessment regime contains intervention limits and response actions for the components. Repair brings the component to a condition above the intervention limit. The

component may be relaced and upgraded to a better condition. This upgrading can be just above the intervention limit, or can be right up to the construction specification, or somewhere between. The level of improvement is a matter for commercial assessment and so is not defined in the code.

0.4 Inspection Frequencies

Inspection frequencies are shown throughout the Code. These frequencies shall be adopted unless otherwise specified by ARTC e.g. in an approved Technical Maintenance Plan.

0.5 Works Management System

To ensure the infrastructure is operating safely and to the specified standard ARTC will inspect and maintain all infrastructure in accordance with this ARTC T&C CoP

All maintenance work identified as necessary to be performed on ARTC rail infrastructure is to be recorded in a Works Management System. This includes work considered urgent and to be carried out within a short timeframe as well as the work judged necessary in the "long term" which becomes planned maintenance.

Details of all defects are held in the Works Management System and the information is used to:-

- manage all maintenance works in priority order; and
- provide data to assist the long term planning of infrastructure maintenance, MPM or capital works.

0.6 Reporting

Routine maintenance inspections contained in the ARTC T&C CoP include scheduled Patrol inspections, General inspections and Detailed inspections. Where defects are detected or measurements are specified during these inspections the information obtained is to be recorded and managed in accordance with the Works Management System. The process for Bridges & Structures is described in Section 9 Structures.

0.7 Mandatory requirements

The ARTC T&C CoP is supplemented by related ARTC supporting documents that may contain mandatory or advisory material in regard to the subject matter of the ARTC T&C CoP. Where mandatory requirements exist in any of the ARTC T&C CoP or any of the related or supplementary or supporting documents, these requirements take precedence over any advisory advice contained in other documents.

0.8 Interpretations

Where alternate interpretations may be placed on statements contained in any ARTC documents relevant to the subject under consideration the Manager Standards shall be informed so the ambiguity can be removed Pending removal of the ambiguity the interpretation with the safest outcome shall be adopted.

0.9 Existing assets and superseded standards

Where standards have been superseded existing assets that do not comply with the new standards may be retained in the track until they are replaced providing that they do not contravene the superseded standard".