

Level Crossings

Section 16

Applicability

ARTC Network Wide SMS

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Amendment Record

Amendment Version #	Date Reviewed	Clause	Description of Amendment
2.0	31 Jul 09		Implementation draft of network wide document which is an amalgamation of the CoP for SA/WA & Vic and NSW requirements.
2.1	18 Jun 10		Banner added regarding mandatory requirements in other documents and alternative interpretations.
2.2	08 Nov 11		Banner added regarding elements of RISSB National CoP being incorporated
2.3	16 Sep 20	16.2, 16.2.1 & 16.2.2	Updates include rebranding of document and inclusion of clauses for sighting distance compliance, public level crossings and private level crossings.

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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.

Table of Contents

Table of Contents2

16 Section 16: Level Crossings3

16.1 Overview3

16.2 Design and Rating3

 16.2.1 General 3

16.3 Sighting Distance compliance3

 16.3.1 Public Level Crossings 3

 16.3.2 Private Level Crossings 4

16.4 Inspection and Assessment4

 16.4.1 Scheduled Grade Crossing Inspection 4

 16.4.2 Un-Scheduled Inspection 5

 16.4.3 Examination 5

16 Section 16: Level Crossings

16.1 Overview

This overview section describes the interim strategy to be used by ARTC for management of level (grade) crossings.

This document is under development towards providing a comprehensive and cohesive level crossing standard that addresses all states and tracks under ARTC infrastructure management. In the interim, it will outline the hierarchy of existing standards and their applicability in each state until the common suite is developed.

It is recognised that many existing level crossings have been taken up as legacy status with pre-existing designs not aligned to current practices for both road and rail traffic, particularly in terms of sighting distances and private crossings.

The requirements of Section 16 and supporting documents have been structured to allow a phased improvement strategy of sighting distances at crossings. The strategy will be risk based and prioritise the lowest performing crossings with mitigating controls once their unique factors have been assessed. It is anticipated this may take several years to establish and once all sites are fully reviewed, they would from that point forward be managed under a TMP-based inspection process.

16.2 Design and Rating

16.2.1 General

Level crossing signage shall comply with the requirements of AS 1742.7. ARTC may introduce additional signage in conjunction with relevant road authorities and in accordance with related Safety Interface Agreements prior to such signage being incorporated into AS 1742.7.

16.3 Sighting Distance compliance

Sighting Distance Design requirements at Level Crossings shall comply with AS1742.7:2016 and ETD-16-02 as outlined below in 16.3.1 and 16.3.2.

- The sighting distances at ARTC level crossings in all States shall be measured using the methodology described in work instruction ETW-16-03.
- The existing standard which applies to existing SA/WA/Vic: Establishing Minimum Protective Measures at Level Crossings ETF-16-01, shall still be followed where relevant and applicable. Should any ambiguity arise between ETD-16-02 and ETF-16-01, the requirements of ETD-16-02 shall take precedence and if any doubt remains the safest alternative must always be followed.

16.3.1 Public Level Crossings

All Public Level Crossings shall comply with AS1742.7:2016.

Public Level Crossings that do not comply with AS1742.7:2016 shall be assessed and managed according to the requirements of Minimum Standard & Minimum Base Conditions in ETD-16-02.

16.3.2 Private Level Crossings

Private Level Crossings shall comply with ETD-16-02, which include the Minimum Standard & Minimum Base Conditions.

The requirement outlined in ETD-16-02 to implement appropriate inspection and risk reduction strategies on existing private level crossings that are non-compliant to the Base Operating Sighting Distance, shall become effective across all of the ARTC network in accordance with ARTC Business Unit Level Crossing Strategy Implementation Plans.

16.4 Inspection and Assessment

16.4.1 Scheduled Grade Crossing Inspection

a. Patrol inspections

The interval between patrols of grade crossings shall not exceed 7 days or as otherwise specified by ARTC e.g. in an approved Technical Maintenance Plan. Track patrols should keep a lookout for defects and conditions (i.e. indicators of a defect) that may affect, or indicate problems with, the integrity of the crossing including the following:

- Flangeway obstructions
- Track geometry including approaches
- Road surface condition
- Condition of walkways
- Condition of fencing – pedestrian mazes.
- Signage

The inspection should be carried out at a speed consistent with the local conditions and the full scope of the inspection being carried out (e.g. the type and number of other infrastructure elements being inspected).

b. General inspections

Scheduled general inspections shall be carried out in a manner appropriate to the at grade crossing type, condition, rate of deterioration, and other local and seasonal factors. General Inspections shall be at intervals not greater than 12 months or as otherwise specified by ARTC e.g. in an approved Technical Maintenance Plan.

A general inspection shall be carried out when suspected defects are identified from conditions determined during patrols inspections.

General inspections shall include the tasks of the patrol inspection and in addition look for conditions or changes in the conditions which may affect the function of the crossing including the following:

- Road / walkway surface cracking or breaking up – deterioration of the road surface can allow moisture and contaminants to enter the ballast and penetrate the subgrade.
- Track geometry / alignment – laterally and vertically - (observe under load), excessive movement under traffic can indicate any of the following;
 - Deterioration of sleepers and fastenings - ballast
 - Subgrade deterioration – track pumping

- Requirement for tamping
- Condition of fastenings and sleepers
- Condition of rail
- Flangeways – clearance / obstructions
- Under Vehicle Clearance
- Track geometry, including vertical alignment under traffic and approaches to crossings
- Condition of road / walkway surfacing materials
- Condition of signs - including visibility and line of sight
- Condition of fencing including guide fencing and pedestrian mazes
- Concrete stools – installation, adequate clearance
- Other defects that could affect the safety of train operations or public access.

16.4.2 Un-Scheduled Inspection

An inspection of Grade crossings shall be carried out following the identification of suspected defects, and the occurrence of an event that may have affected the infrastructure.

16.4.3 Examination

The gang length number, date of inspection and location of each level crossing and take-off are to be recorded on the appropriate form

At each location, the following are to be recorded;

- measurements of gauge,
- flange clearance and track alignment,
- condition of ties and fastenings, rail top, drainage, rail corrosion, roadway or take-off surface and signs, fences, gates etc.

Where signs and markings owned by others are found to be unsatisfactory, the Infrastructure Manager or nominated representative is to forward this information to the owner (road authority or private owner) for appropriate corrective action.