Engineering Manual

General

CRN GM 003

SCOPE OF COVERAGE OF ENGINEERING STANDARDS

Version 1.1

Issued October, 2015

Owner:	Manager Engineering Services
Approved by:	Committee of Principal Engineers
Authorised by:	J Zeaiter, Manager Engineering Services

Document control

Revision	Date of Approval	Summary of change
1.0	December 2011	First Issue
1.1	October, 2015	See Summary of changes below

Summary of changes from previous version

Section	Summary of change
4	Included additional abbreviations and definitions
Table 1	Corrected format and numbering; Removed question marks; Changed organisation names.

Contents

1 Scope and application

This manual provides an overview of the scope of coverage of John Holland Rail (JHR) Engineering Standards applied to the NSW Country Regional Network (CRN). The scope is defined by engineering standards provisions covering particular asset configurations and functional requirements of assets.

2 Use of this manual

This manual shall be used as a first point of reference for configuration change proposals involving alternative asset types or changes in the operational use or functional requirements of assets. The purpose of this use is to validate whether the proposal is specifically covered by the JHR CRN Engineering Standards.

3 References

CRN GM 001: Engineering Standards System Manual

CRN GM 002: Engineering Standards Development Manual

4 Abbreviations and definitions

A list of common abbreviations and definitions is contained in the CRN GM 001 Engineering Standards Systems Manual.

The following additional abbreviations and definitions apply to this manual:

DLA	Dynamic Load Allowance
DIRN	Defined Interstate Rail Network
ATSB	Australian Transport Safety Bureau
OMD	Operations and Maintenance Deed
TfNSW	Transport for New South Wales
NBN	National Broadband Network

5 Engineering standards provisions and categorisation

A number of provisions of the engineering standards are listed in Table 1. The list is not a comprehensive list of all of the provisions of the engineering standards, but provides guidance on the boundary conditions of engineering standards and matters for which the relevance of engineering standards needs to be considered.

The provisions of Table 1 are categorised as follows:

Category 1: “Specifically Included”	contain specific standards requirements.
Category 2: “Provision in Framework”	has been considered in the structure and framework of engineering standards but specific requirements are still to be developed. e.g. 30 tonne axle loads between Bowenfels and Kandos.

Category 3: “No Specific Provision”	has been considered in engineering standards document development, but no specific requirements have been included at this stage.
Category 4: “Specifically Excluded”	Outside the functional requirements of the engineering standards and are proscribed for the CRN.

6 Actions required for different categories of engineering standards provisions

For configuration change proposals involving alternative asset types or changes in the operational use or functional requirements of assets and where engineering standards provisions have been listed in Table 1, the following actions shall be undertaken:

6.1 Category 1: Standards provisions specifically included

The proposal is to be addressed in accordance with the change and configuration management change requirements of CRN GM 001. The proposal must comply with the CRN Engineering Standards.

6.2 Category 2: Functional requirements with a provision in the framework

The proposal will require further development of standards in relation to the matter. The proposal is to be referred to the Engineering Standards Configuration Committee for consideration and development.

6.3 Category 3: Functional requirements with no specific provision

The proposal is to be addressed in accordance with the change and configuration management change requirements of CRN GM 001. Where the new functional requirements involve a change to the CRN risk profile and new or revised engineering standards risk controls are required, these requirements are to be referred to the Engineering Standards Configuration Committee.

6.4 Category 4: Functional requirement specifically prohibited

The proposal is to be considered as requiring a material change to the JHR standards or JHR CRN Rail Safety Accreditation and will only be progressed if an appropriate business and safety case can be prepared.

7 Actions required for non-listed functional requirements

For configuration change proposals involving alternative asset types or changes in the operational use or functional requirements of assets and where the items are not listed in Table 1, the following actions are to be undertaken:

1. Prepare the proposal in accordance with the requirements of the engineering standards;

or

where the proposal is not specifically covered by the engineering standards:

2. Refer the proposal to the Engineering Standards Configuration Committee.

Table 1 - Engineering Standards Provisions						
Item	**Standards Provisions**	**Categories** **1.** Specifically include **2.** Provision in framework **3.** No specific provision **4.** Specifically exclude (proscribe)				**Comments / Applicable Corridors / References**
		1	**2**	**3**	**4**	
1. Strategic and General Items						
1.1	Use of Bowenfels to Parkes as alternative to interstate network			✓		Bowenfels to Parkes is part of the DIRN / covered by the ATSB
1.2	Potential upgrade of Kandos – Wallerawang for Heavy Haul (cater for 30t axle load) Ref: OMD Schedule 12)		✓			Note: Rail is currently 53 kg/m and includes steel sleepers
1.3	Maintenance of minimum corridor widths for access and potential engineering / operational / business use	✓				Refer to CRN CS 410, corridor strategies and site specific constraints
1.4	Corridor provision for longitudinal third party services			✓		Already exist in some locations. Potential for NBN roll out / design to keep close to boundary fence
1.5	Electric Traction				✓	
1.6	Redundant infrastructure			✓		
2. Rolling Stock and Structure Clearances						
2.1	TfNSW / ARTC Narrow / non-electric clearances	✓				
2.2	Other clearance profiles e.g. - Narrow Square - Narrow Container - Narrow Hopper - Loose loads / car carriers / overlength vehicles - Other, including intersystem	 ✓ ✓ ✓ ✓		 ✓		 Particular cases only. e.g. operational interface with ARTC between Manildra and Parkes

Table 1 - Engineering Standards Provisions						
Item	**Standards Provisions**	**Categories** **1.** Specifically include **2.** Provision in framework **3.** No specific provision **4.** Specifically exclude (proscribe)				**Comments / Applicable Corridors / References**
		1	**2**	**3**	**4**	
2.3	Out of Gauge Loads	✓				Needs to be considered, at least for defective / damaged vehicles. Operational use to be considered on a case by case basis Platform heights need to remain standard
3. Axle Load / Speed / Heavy Locomotives						
3.1	XPT / Xplorer trains in accordance with 2004 TOC Manual	✓				Note: Specific level crossing restrictions no longer apply
3.2	Other trains in accordance with 2004 TOC Manual	✓				
3.3	Status of ARTC TOC Waivers prior to OMD	✓				Approved waivers, applicable to CRN to be incorporated into standards
3.4	Status of ARTC TOC Waivers and standards changes after OMD. e.g. 2011 waivers					CRC to advise on new waivers which will impact on CRN
3.5	Provisions for non-standard axle configurations (eg short heavy vehicles)			✓		Can occur / structures to be considered
3.6	Specific requirements for wheel diameter	✓				RS Interface standards
3.7	Specific wheel / rail profile requirements	✓				
4. Train Lengths						
4.1	Corridor requirements for maximum train length			✓		Specific corridor requirements

Table 1 - Engineering Standards Provisions						
Item	**Standards Provisions**	**Categories** **1.** Specifically include **2.** Provision in framework **3.** No specific provision **4.** Specifically exclude (proscribe)				**Comments / Applicable Corridors / References**
		1	**2**	**3**	**4**	
5. Bridges and Level Crossings						
5.1	For new underbridges bridges in accordance with CRN CS 310 for axle load combinations in accordance with AS5100: Heavy Haul : 350-LA plus DLA Class 1 & 2 Lines: 300-LA plus DLA Class 3-5 Lines: 280-LA plus DLA Sidings (including Loading Bins): 330-LA without DLA	✓				CRC does not currently distinguish between track classes in specifying loading requirements for new bridges
5.2	Requirements for underbridge refurbishment in Accordance with CRN CS 310	✓				Walkways required
5.3	Specific considerations for overbridges	✓				Australian standard, including screens
5.4	Specific considerations for level crossings	✓				In accordance with current standards. Note new level crossing components and standards designs need to be included
5.5	Footbridges	✓				TfNSW maintains footbridges to passenger platforms / CRN maintains other footbridges e.g. Wallerawang
6. Passenger Requirements						
6.1	Passenger platforms and buildings structure and clearances	✓				TfNSW maintains their platforms. JHR inspects coping for potential infringements / Heritage requirements on some non-TfNSW buildings
6.2	Passenger and vehicle access to stations			✓		Areas are demarcated as TfNSW
6.3	Provision of services to stations (power / lighting / water / communications / drainage / sewerage)			✓		Occurs
6.4	Irregular passenger activities (heritage / steam / other special trains)			✓		No specific requirements / platforms must be safe

Table 1 - Engineering Standards Provisions						
Item	**Standards Provisions**	**Categories** **1.** Specifically include **2.** Provision in framework **3.** No specific provision **4.** Specifically exclude (proscribe)				**Comments / Applicable Corridors / References**
		1	**2**	**3**	**4**	
7. Operational Activities on CRN Tracks						
7.1	Shunting on main lines / continuation of current practices	✓				Existing conditions / walkways of 15 mm rolled ballast
7.2	Mainline loading / unloading of trains	✓				e.g. requirements for hardstand / CRC does not permit coal mainline loading. Conditions subject to interface agreement
7.3	Access to trains on corridor by operators (eg crew change)			✓		
7.4	Provision of services to operators (eg communications and power supply to on-train generators)			✓		No specific requirement
7.5	Storage on vehicles on CRN tracks	✓				Consider securing of rolling stock / track conditions for movement
7.6	Fuelling and other provisioning on CRN tracks	✓				Currently occurring
7.7	Provision of walkways for operators	✓				Rolled 15 mm gravel only
7.8	Hazardous freight			✓		TOC Manual / RS interface requirements
8. Train and Train Operator requirements						
8.1	Train and vehicle identification and signage	✓				Included in existing standards
8.2	Train visibility, including reflective strips and lighting	✓				Included in existing standards
8.3	One person operation			✓		e.g. XPT / Explorer
8.4	Way-side monitoring			✓		Note temporary weighbridge at Parks
9. Signalling and Train Control						
9.1	Centralised Train Control (CTC)	✓				
9.2	Train Order Working	✓				ARTC / JHR Interface of TOW
9.3	Staff / Ticket and Staff				✓	

Table 1 - Engineering Standards Provisions						
Item	**Standards Provisions**	**Categories** **1.** Specifically include **2.** Provision in framework **3.** No specific provision **4.** Specifically exclude (proscribe)				**Comments / Applicable Corridors / References**
		1	**2**	**3**	**4**	
9.4	Electric Staff				✓	
9.5	Block Telegraph				✓	
10. Particular Corridor Requirements						
10.1	Fire Hazard Management			✓		
10.2	Noxious weeds and animal control			✓		
10.3	Erosion Control			✓		
10.4	Public Safety, particularly with respect to bridges including road over rail bridges (OMD Sch. 12 Sec 3.6)	✓				e.g. screens
10.5	Non-standard fencing and security (e.g. urban areas)			✓		Not Required
11. Emergency Requirements and Corridor Access to Emergency Service						
11.1	Flooding / levee bank protection / cross-track flood barriers	✓				Flood barriers are not CRC responsibility to erect
11.2	Emergency access to corridor	✓				
12. Miscellaneous Assets						
12.1	Turntables, Water Tanks and Pits	✓				