



# Train Operating Conditions (TOC) Manual: Index / Glossary / Page Layout

OS 001 IM

## Document Status

Version #	Date Reviewed	Prepared by	Reviewed by	Endorsed	Approved
1.6	24 Jun 24	Operations Standards	Stakeholders	Manager Operations Standards	General Manager Technical Services & Assurance 28/06/2024

## Amendment Record

Amendment Version #	Date Reviewed	Clause	Description of Amendment
<i>Note: As ARTC continues to implement the Route Access Standard (RAS) and stand down the Train Operating Conditions (TOC) Manual, this document will be maintained to provide traceability of content transferred.</i>			
1.5	8 Feb 24	Various	Updated index to general instruction pages with traceability for withdrawn TOC Manual Section Pages and previously withdrawn TOC Manual Sections 1, 7, 9 & 11. Greyed out other redundant information.
1.6	24 Jun 24	Various	Updated index to general instruction pages with traceability for withdrawn TOC Manual Sections 2, 3 and 4 (in part). Editorial updates to replace cover image with tables for document status and amendment record as well as note about ongoing maintenance of this document, and removed previously greyed out old status sheets, control sheets and amendment records. Added new table for current status of TOC Sections.

## Current Status of TOC Sections

Number	Name	Last Updated	Version
001	Section 01 – Route Standards – Withdrawn – Refer to RAS General Information and Section Pages	N/A – Withdrawn	6.0
002	Section 02 – Locomotive Operations – Withdrawn – Superseded by RAS General Information and RACN 24-004	N/A - Withdrawn	6.0
003	Section 03 – Train Operations – Withdrawn – Superseded by RAS General Information	N/A - Withdrawn	3.0
004	Section 04 – Train Marshalling Restrictions	01 Apr 2004	4.0
005	Section 05 – Loading Restrictions	01 Aug 2000	3.0
006	Section 06 – Train Inspection	01 Dec 2002	1.0
007	Section 07 – ARTC Train Numbering – Withdrawn – Superseded by RAS Appendix B	N/A – Withdrawn	1.5
008	Section 08 – Disabled Trains	01 Dec 2002	1.0
009	Section 09 – Operation of Track Maintenance Vehicles – Withdrawn – Superseded by EPP-32-01	N/A – Withdrawn	4.0
010	Section 10 – Locomotive and Rolling Stock Data	16 Nov 2020	2.1
011	Section 11 – Track Maintenance Vehicle Data – Withdrawn – Refer to Aquipa and EPP-32-01	N/A – Withdrawn	2.1

### General Instruction Pages

### **INDEX**

#### INDEX TO GENERAL INSTRUCTION PAGES SECTIONS 1 TO 11

The following table provides traceability of information previously retained in the TOC Manual:

	Section	Page	New location
<b>A</b>			
<b>Advisory speed boards</b>			RAS Section Pages
<b>Air brake inspection and tests</b>	6	3	-
<b>Air brake – defective</b>	8	4	-
<b>Air springs – defective</b>	8	7	-
<b>Amalgamation of trains</b>	3	1	RAS GI Section 7.1
<b>Attaching pre inspected vehicles</b>	6	6	-
<b>Attaching un inspected vehicles</b>	6	6	-
<b>Axle box bearings – defective</b>	8	11	-
<b>B</b>			
<b>Banking locomotives</b>	2	2	RAS GI Sections 7.2.2 & 7.3.3
<b>Block working of locomotives Metropolitan area</b>	2		No longer ARTC territory
<b>Brake holding test</b>	6	3	-
<b>Brake pipe – defective</b>	8	6	-
<b>Brake pipe leakage test</b>	6	3	-
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<b>Brake type:</b>	4	1	-
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- Main reservoir	4	3	RAS GI Sections 4 and 7
<b>C</b>			
<b>Classification of lines</b>			RAS Section Pages Introduction
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- Assisting disabled track maintenance vehicles	8	4	-
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- <i>Hauling a disabled train</i>	8	2	-
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- <i>Electric trains</i>	8	6	-
- <i>Freight trains</i>	8	6	-
- <i>Locomotive hauled passenger trains</i>	8	5	-
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- Precautions	8	8	-
- Thermal cracks	8	10	-
- Wheel skids – Permissible speeds	8	9	-
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<b>Dragging equipment detectors – location</b>			RAS GI Section 2.9
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<b>Embankment rock fall detector – location</b>			RAS GI Section 2.9
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<b>Emergency equipment</b>	<b>3</b>	<b>6</b>	RAS GI Section 3.2
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- Freight trains descending grades of 1 in 33	<b>3</b>	<b>1</b>	RAS GI Section 4.8
- Holding a train stationary on a grade	<b>3</b>	<b>2</b>	RAS GI Section 4.14
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- Brake types	<b>2</b>	<b>2</b>	RAS GI Section 7.1
- Categories – Load / Speed	<b>2</b>	<b>4</b>	Redundant – not transferred
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- Dead attached	<b>2</b>	<b>3</b>	RAS GI Section 4.3.3
- Distributed power	<b>2</b>	<b>2</b>	RAS GI Section 7.3.3
- Mixing types	<b>2</b>	<b>3</b>	RAS Appendix E (initially in RACN 23-001)
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<b>Out-of-gauge loads</b>	<b>5</b>	<b>2</b>	-
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- Sydney metropolitan and Illawarra	<b>1</b>	<b>5</b>	RAS GI Section 2.11
- South	<b>1</b>	<b>6</b>	RAS GI Section 2.11
- West	<b>1</b>	<b>7</b>	RAS GI Section 2.11
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<b>Sanding:</b>	<b>2</b>	<b>2</b>	RAS GI Section 10.2
- Excessive			
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<b>Stabling trains on running lines</b>	<b>3</b>	<b>6</b>	ANTR 420
<b>T</b>			
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<b>Track Maintenance vehicle data</b>	<b>11</b>	<b>Index</b>	Aquipa – refer EPP-32-01
<b>Track Maintenance vehicles -</b>			
- Disabled – assisting	<b>8</b>	<b>4</b>	
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- Introduction	<b>9</b>	<b>1</b>	EPP-32-01
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<b>Trailerail</b>	<b>10</b>	<b>27</b>	Vehicles disposed
<b>Trailing tonnage table</b>	<b>4</b>	<b>1</b>	-
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- Brake holding tests	6	4	-
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- Bogie and wheel equipment	6	2	-
- Brake equipment	6	2	-
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- Marshalling	4	1	RAS GI Section 7
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- Attaching pre inspected vehicles	6	6	-
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<b>W</b>			
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<b>Wheel impact load detector</b>	<b>1</b>	<b>2</b>	<b>RAS GI Section 2.9</b>
<b>Wheel skids</b>	<b>8</b>	<b>9</b>	<b>-</b>
<b>Wheel spin, locomotive</b>	<b>2</b>	<b>3</b>	<b>RAS GI Section 10.3</b>
<b>Wheels – defective</b>	<b>8</b>	<b>8</b>	<b>-</b>
<b>Wheels – thermal cracks</b>	<b>8</b>	<b>10</b>	<b>-</b>
<b>Wolo speed restrictions</b>	<b>3</b>	<b>4</b>	<b>RAS GI Section 2.10</b>
<b>Wooden bodied vehicles</b>	<b>4</b>	<b>3</b>	<b>RAS GI Section 7.5</b>

**This glossary contains terminology used in the General Instruction Pages of the TOC manual. Terminology is consistent with the Network Rules and the Draft National Code of Practice.**

<b>airbrake</b>	A braking system activated by change of air pressure.
<b>articulated vehicle</b>	A vehicle comprising of two or more units, adjacent ends of individual units being supported on a common bogie and permanently connected by a device which permits a degree of free rotation in all planes.
<b>articulated platform</b>	The individual end or intermediate units of an articulated vehicle.
<b>automatic airbrake</b>	A braking system where the loss air pressure (e.g. brake pipe) automatically results in an emergency brake application.
<b>bank locomotive</b>	A locomotive provided at the rear of a train to assist it up a steep grade (bank).
<b>basic block working</b>	A form of manual block working which does not require the issue of a Condition Affecting the Network (CAN) form.
<b>block train</b>	A train required to travel under manual block working in track-circuited territory.
<b>block working</b>	See 'manual block working'.
<b>brake pipe continuity</b>	The brake pipe coupling hoses are connected and coupling cocks are open between vehicles to ensure changes in air pressure in the brake pipe is transmitted from one end of the train to the other end.
<b>consist</b>	Listed order of the vehicles arranged to make up a complete train.
<b>convoy</b>	A group of track vehicles not coupled but travelling closely together under a single Proceed Authority or a Track Occupancy Authority.
<b>coupling cock</b>	A cock (valve, tap) fitted at each end of the brake pipe(s), main reservoir pipe, etc. enabling the air connection to the coupling hose to be opened or closed when required.
<b>coupling hose</b>	A flexible connection generally fitted to the coupling cock of the brake pipe(s), main reservoir pipes, etc. to provide an air connection between adjacent vehicles.
<b>diesel multiple unit (DMU)</b>	A distributed power passenger train made up of similar diesel powered and non-powered vehicles capable of carrying passengers and operating as a train.
<b>distributed power</b>	A train operating with power units located at the front and one or more other locations in the train consist. Remote power units may be controlled from the lead locomotive by radio signal or hard wired through the train.
<b>draw capacity</b>	The strength of a vehicle (couplers, draftgear, underframe, etc.) used to determine the load that can be hauled behind the vehicle.
<b>electric multiple unit (EMU)</b>	A distributed power passenger train made up of similar electric powered and non-powered vehicles capable of carrying passengers and operating as a train.

<b>emergency cock</b>	A readily accessible manually operated valve or tap, in a vehicle with an automatic air brake that exhausts the brake pipe to atmosphere causing an emergency brake application. Sometimes referred as an emergency brake pipe tap.
<b>emergency coupler</b>	An adaptor used to couple vehicles with incompatible coupling systems.
<b>end-of-train marker (EOTM)</b>	A device other than tail lights fitted to the trailing end of the last vehicle of a train.
<b>fit for purpose</b>	Able to be used for the required function.
<b>handbrake</b>	A mechanical device used to secure a rail vehicle against movement. Handbrake includes a spring parking brake.
<b>handlamp</b>	A lamp or torch which can display red, white & green lights.
<b>haul</b>	To move rail traffic using motive power source at the leading end of the train.
<b>horn</b>	See whistle.
<b>light locomotive</b>	One or more locomotives not attached to another vehicle.
<b>loading cycle</b>	Cycle of operation of a freight train including travelling to a loading location, loading, travelling to destination and unloading.
<b>loading outline</b>	The maximum height and width to which rail vehicles can be loaded for a particular line without fouling, as prescribed in the Train Operating Conditions manual, Section 5, Loading Restrictions.
<b>locomotive</b>	A self-propelled rail-bound vehicle that may be used to move other vehicles. The Driver's cab of a multiple power unit is considered a locomotive.
<b>manual block working</b>	A method of special working which ensures sole occupancy by manually maintaining a block behind a rail traffic movement.
<b>marker lights</b>	Lights which indicate the front or rear of the train.
<b>marshal</b>	To arrange the order of vehicles in a train's consist.
<b>multiple unit locomotive</b>	Two or more locomotives marshalled together to provide the power to move itself or other vehicles.
<b>multiple unit train</b>	See DMU and EMU.
<b>must</b>	The word 'must' indicates that a statement is mandatory.
<b>Network Rules</b>	Rules issued by RIC to mandate the requirements for safe operation in the RIC network.
<b>normal speed</b>	A speed that does not exceed the current speed limit for the track and class of rail traffic.
<b>On-track vehicles</b>	Track maintenance vehicles (self propelled or trailer) that can operate on rail, and are typically used for track construction, maintenance and restoration, servicing and inspection of overhead electrical infrastructure.
<b>Operator</b>	An organisation that manages, operates or maintains rail traffic on the RIC Network.



<b>Operator's representative</b>	A person authorised by an Operator to act on the Operator's behalf.
<b>Operator Specific Procedures (OSP)</b>	A set of instructions prepared by an Operator on the RIC Network, or by RIC, specifically for that organisation's use.
<b>partial train inspection</b>	A train inspection carried out when the train consist is altered and includes only parts of a full train inspection.
<b>prescribed train</b>	A train laden in excess of a specified percentage of its maximum load that can be hauled by the motive power unit, for that portion of line.
<b>power car</b>	A self-propelled vehicle, which may or may not convey passengers and/or freight, and operates in conjunction with similar vehicles in a multiple unit consist.
<b>propel</b>	To manage airbrake operation of moving rail traffic from a cab that is not in the lead vehicle of a train.
<b>Qualified worker</b>	A worker certified as competent to carry out the relevant task.
<b>Rail Infrastructure Corporation (RIC)</b>	The owner and maintainer of the Network.
<b>rake of vehicles</b>	A number of vehicles that are kept together in a fixed train consist
<b>road/rail vehicle</b>	Pneumatically tyred road vehicles fitted with attachments that permit operation on rail, which can be readily transferred from one mode to another without additional facilities. Sometimes referred as Hi-rail vehicles.
<b>Rova Mech</b>	See TOC Waiver
<b>ruling grade</b>	The maximum grade on a section of track used to determine the motive power required for a train and the load that can be hauled a vehicle on that section of track.
<b>run around</b>	Locomotive movement where the locomotive is moved from one end of a train to the other end of the train to enable the train to change direction of travel.
<b>scaled wheel</b>	A build up of metallic material on a wheel tread's surface, generally as a result of overheating from sticking brakes or dragging brakes causing wheels to slide on the rail.
<b>single self-propelled vehicle</b>	A rail vehicle that can operate under its own power without being coupled to another vehicle.
<b>skidded wheels</b>	Flat areas on the wheel tread, caused when wheels "lock up" under braking or seized axles and the wheels slide or skid on the rail.
<b>tail lights</b>	Red lights used as end-of-train markers.
<b>thermal cracks</b>	Cracks in the running surface and adjacent areas of a wheel, caused by thermal effect of heating and cooling resulting from on-tread friction braking.
<b>TOC Waiver</b>	Train Operating Conditions (TOC) Waiver. – A notice of changes or exceptions to the requirements specified in the published RIC Train Operating Conditions Manual

<b>tonnage signal</b>	A signal at the foot of a steeply rising grade, fitted with a sign that directs Drivers of prescribed trains.
<b>track</b>	The combination of rails, rail connectors, sleepers, ballast, points and crossings.
<b>track circuit</b>	An electric circuit where current is carried through the rails and used to detect the presence of trains. Track-circuits are used in the operation and control of points, signalling equipment and indicators.
<b>track circuit shorting clip</b>	A cable which can be clamped to a line's rails to activate track-circuits.
<b>trackside monitoring equipment</b>	Devices that monitor and respond to track, trackside and rail vehicle condition.
<b>track speed</b>	The allowable maximum train speed for a portion of track.
<b>track maintenance vehicle</b>	See track vehicle.
<b>track vehicle</b>	A vehicle, usually self-propelled, used mainly for inspecting and maintaining track and infrastructure.
<b>track vehicle operator</b>	A Qualified Worker controlling the movement of a track vehicle.
<b>train</b>	A locomotive or self-propelled vehicle, alone or coupled to one or more vehicles.
<b>train consist</b>	A group of vehicle coupled together to form a train.
<b>train (identification) number</b>	A train or run number used to provide unique identification of a train. Refer to TOC General Instruction Pages, Section 7 Train Numbering
<b>trolleys</b>	Small rail vehicles that can be operated on rail and are moved manually.
<b>vehicle</b>	Any item of rolling stock that can operate on rail.
<b>wheel scale</b>	A build up of metallic material on a wheel tread's surface.
<b>whistle</b>	A device such as a horn, whistle, bell, siren or hooter fitted to a train or track maintenance vehicle to give audible warning.
<b>WOLO</b>	Speed restrictions applied during hot weather.
<b>work out of service</b>	To work to a suitable yard, service depot, siding or location where rolling stock can leave the running line for repair or replacement of vehicle equipment.

FORMAT OF MAXIMUM SPEED OF LOCOMOTIVES AND ROLLING STOCK PAGE

**ITEM 3**  
Classification of Tracks

**ITEM 1**  
Sections

## Cootamundra - Parkes

### Maximum Speed of Locomotives and Rolling Stock

Class of Track	Locomotive Class						Notes
	3	3	2				
Line Max. values	A	B	C	D	E	F	
<b>Locomotives</b>							
Multiple Loco	4	4	4				
S1	30	30	N/A				
S2	30	30	50				
S3	30	30	80				
S4	30	30	80				
S5	30	30	80				
S6	30	30	80				
S7	30	30	90				
S8	30	30	100				
S9	30	30	100				
S10	30	30	100				
S11	30	30	80				
S12	30	30	100				
S13	30	30	100				
<b>Freight</b>							
Class A	60	60	100				
Class B	60	60	100				
Class C	60	60	80				
Class D	70	60	80				
Class E	60	60	70				
Class F	N/A	N/A	N/A				
Class G	N/A	N/A	N/A				
<b>Passenger</b>							
XPT	N/A	N/A	N/A				
Xolmer	N/A	N/A	N/A				
Diesel Train	60	60	100				
Loco Hauled	60	60	100				
<b>Accident Cranes</b>							
70 tonne	60	60	80				
110 tonne	60	60	80				
120 tonne	30	30	30				
Notes:							
(a) Before trains are programmed to cross at Forbes, the Train Controller is to ascertain if the S16 Siding is clear of wagons. When it is determined the siding is empty, the middle and side siding may be used for crossing purposes. No crossing loop is provided.							

**ITEM 2 Line Map**

- Signal Box
- Location
- Double Track
- Subsection break
- Grain (Loading facilities)
- Intermediate Location
- Single Track
- Crossing loop length
- AD indicates the next Down station is equipped for automatic working.
- AU indicates previous Up station is equipped for automatic working i.e. stations do not require to be attended for obtaining the Electric Staff for the section.
- Indicates crossing loop.
- Indicates Train Order location.
- Adjoining track sections
- Private line/siding

**ITEM 4 Multiple Locomotive Working**

**ITEM 5 Maximum Speed of Locomotives**

**ITEM 6 Classification of Freight Vehicles**

**Maximum Speed of vehicle**

**ITEM 7 Classification of Passenger Vehicles**

**ITEM 8 Safeworking Systems**

Safeworking System	Staffing
Cootamundra North to Cootamundra West	Rail Vehicle Detection (North Fork)
Cootamundra to Cootamundra West	Rail Vehicle Detection (South Fork)
Cootamundra West to Stockinbingal	Electric Staff
Stockinbingal to Brisbane	Electric Staff
Brisbane to Caragabal	Electric Staff
Caragabal to Wirinya	Electric Staff
Wirinya to Forbes	Electric Staff
Forbes to Parkes	Electric Staff

SAMPLE PAGE WESTERN SECTION 8

**EXPLANATION OF 'ITEMS' FROM PREVIOUS PAGE**

<b>ITEM 1</b>	<b><u>SECTIONS</u></b>	<ul style="list-style-type: none"> <li>• The Southern, Western, Northern and Illawarra regions are divided into various sections. Refer to SECTION LOCATION MAP for various sections.</li> <li>• Each section provides the condition for operation of rolling stock.</li> </ul>
<b>ITEM 2</b>	<b><u>LINE MAP</u></b>	<ul style="list-style-type: none"> <li>• See list page 1 for details.</li> </ul>
<b>ITEM 3</b>	<b><u>CLASSIFICATION OF TRACK</u></b>	<ul style="list-style-type: none"> <li>• The class of track will affect the speed and types of locomotives and rolling stock authorised to run over the various sections.</li> </ul>
<b>ITEM 4</b>	<b><u>MULTIPLE LOCOMOTIVE WORKING</u></b>	<ul style="list-style-type: none"> <li>• The columns associated with locomotives headed 'MULTIPLE LOCOS' shows the maximum number of locomotives powering that may run coupled on each relevant section of track.</li> <li>• Up to a maximum of 5 locomotives total can be marshalled at the front of a train. However, the number of locomotives that can be powering at any given time is indicated in the multiple working section on the respective MAXIMUM SPEED OF LOCOMOTIVES AND ROLLING STOCK page.</li> </ul>
<b>ITEM 5</b>	<b><u>MAXIMUM SPEED OF LOCOMOTIVES</u></b>	<ul style="list-style-type: none"> <li>• Identifies locomotive speed categories and maximum speeds approved for that section of track.</li> <li>• The letters N/A indicate these vehicles are not permitted to run over this section of track.</li> </ul> <p data-bbox="373 853 555 891">Operation of unlisted locomotives</p> <ul style="list-style-type: none"> <li>• Refer to Track Access Provider for authorisation.</li> </ul>
<b>ITEM 6</b>	<b><u>CLASSIFICATION OF FREIGHT VEHICLES</u></b>	<ul style="list-style-type: none"> <li>• Identifies freight vehicle class and maximum speeds approved for that section of track.</li> <li>• The letters N/A indicate these vehicles are not permitted to run over this section of track.</li> </ul> <p data-bbox="373 1032 555 1070">Operation of unlisted freight vehicles</p> <ul style="list-style-type: none"> <li>• Refer to Track Access Provider for authorisation.</li> </ul>
<b>ITEM 7</b>	<b><u>CLASSIFICATION OF PASSENGER VEHICLES</u></b>	<ul style="list-style-type: none"> <li>• Identifies passenger vehicles and maximum speeds approved for that section of track.</li> <li>• The letters N/A indicate these vehicles are not permitted to run over this section of track.</li> <li>• The grouping Diesel Train includes self propelled diesel trains and Rail Motors.</li> </ul> <p data-bbox="352 1256 555 1294">Operation of unlisted passenger rolling stock</p> <ul style="list-style-type: none"> <li>• Refer to Track Access Provider for authorisation.</li> </ul>
<b>ITEM 8</b>	<b><u>SAFeworking SYSTEMS</u></b>	<ul style="list-style-type: none"> <li>• This section indicates the safeworking system and the area controlled by that system.</li> <li>• When words 'Yard Working' appear, the nominated section of track will be worked in accordance with the instructions contained in NTR 415 – Yard Limits.</li> </ul>
<b>ITEM 9</b>	<b><u>PRIVATE LINE/SIDING</u></b>	<ul style="list-style-type: none"> <li>• A Private (Non RIC owned) Line/Siding represented in the Section Pages(Line Map) by "P" is one that is not owned or operated by the Track Access Provider and therefore will not necessarily have operating conditions published in this Manual.</li> <li>• Where this Manual contains information relating to the operating conditions for a private Line/siding, that information is published with the agreement or at the request of the owner/operator of that Line/siding.</li> <li>• For the purpose of train control, to and from a private Line/siding, the operator in securing a train path on the Access Network, has certified that there is an interface understanding/agreement between the operator and the owner/operator of the private Line/siding, which authorises the train/vehicles to operate within the confines of the private Line/siding.</li> <li>• In providing an agreed train path in accordance with the operations protocol, Track Access Provider has certified that the operator's train will be accepted from or delivered to the boundary of the private Line/siding nominated in the operator's train path application.</li> </ul>

Where can locomotives run?  
Full Sectional Loads & Schedules  
Running times

The SPEED (S) and LOAD (L) category is determined by referring to the General Instruction Pages - SECTION 10 Locomotives and Rolling Stock Data or the table shown in SECTION 2 Locomotive Operations.

Where can locomotives run?

Where locomotives can run is indicated in the MAXIMUM SPEED OF LOCOMOTIVES AND ROLLING STOCK table located on the first page of the various subsections of each region.

When a speed is shown this is the authorisation for that category of locomotive to operate. Where the letters N/A appear that category of locomotive is not approved to operate.

Australia Southern Railroad (A.R.G.) - Locomotives

CODE	CATEGORY	DESCRIPTION OF VEHICLE	MAX SPEED km/h	LINE WEIGHT TONNES	LENGTH OVER COUPLING FACE (m)	DRUM CAPACITY m <sup>3</sup>	HORSE POWER	REMARKS
CLP	S5 LB	Diesel	115	126	20,496	1.80	3000	
CLP	S5 LB	Diesel	115	132	20,496	1.80	3000	
GM(2)	S6 L12	Diesel	115	146.3	18,542	0.90	1800	
22	S9 L10	Diesel	115	110	18,440	1.80	2000	Ex Pacific National 422 class
31	S2 L5	Diesel	100	137	20,220	1.80	3000	Ex L class, Note m applies
830	S13 L13	Diesel	100	71.4	14,800	0.90	900	
900	S13 L13	Diesel	100	71.4	14,800	0.90	900	Ex DARCO class with lowered short hood

**Cootamundra - Parkes section 8**

Locomotive	A	B	A	B
101	30	30	N/A	
102	30	30		
103	30	30		

Schedules

Schedule loads are set so that the train can operate within a preferred timetable. They are normally set lighter than the Full Sectional Load so that full advantage can be taken of the high power to weight ratio.

DOWN LOADS & CONDITIONS SECTIONS	LOCOMOTIVE CLASS = L	LOCOMOTIVE LOADS TONNES					VEHICLE CLASS	SECT RUN TIMES	NOTES
		SINGLE	DOUBLE	TRIPLE	QUAD	QUIN			
1-2 WOODS CREEK - DUMPS RD	L3	1000	2400	4000	4800	ABCD	1		
2-3 WOODS CREEK - DUMPS RD	L4	1100	2200	3500	4500	ABCD	1		
3-4 WOODS CREEK - DUMPS RD	L5	1047	2041	3141	4188	ABCD	1		
4-5 WOODS CREEK - DUMPS RD	L6	800	1800	2700	3104	ABCD	1		
5-6 WOODS CREEK - DUMPS RD	L6	800	1844	2489	3288	ABCD	1		
6-7 WOODS CREEK - DUMPS RD	L3	750	1800	2200	3000	ABCD	1		
7-8 WOODS CREEK - DUMPS RD	L7	800	1818	2100	3000	ABCD	1	2-7%	
8-9 WOODS CREEK - DUMPS RD	L10	700	1400	2100	2800	ABCD	1	2-7%	

Indicates sections of track the schedule applies to.

Maximum trailing tonnage permitted per schedule where shown.

Class of vehicle permitted on schedule.

Schedule subgrouping and speed.  
Main Line  
A = 115km/h  
B = 100km/h  
C = 80km/h  
D = 65km/h  
Branch Line  
Section running times.

Full Sectional Loads

Indicates permitted trailing tonnage per nominated category of locomotive for the various sections of track. Ruling load shown in bold. Where no loads appear that category of locomotive is not approved to operate.

DOWN	SECTIONAL RUNNING TIMES							FULL SECTIONAL LOADS LOCOMOTIVE CATEGORIES = L														S/M/C			
	1	2	3	4	5	6	7	1,1	1,2	1,3	1,4	1,5	1,6	1,7	1,8	1,9	1,10	1,11	1,12	1,13	1,14				
WOODS CREEK	%	%	%	%	%	%	%																		
WEST TAMWORTH	54	56	52	54	56	55	2130		1476	1386	1264	1146	1125	1024	893	802	706	708	626						1.62
Tamworth	8	8	8	8	8	8	85		1861	1786	1598	1478	1444	1302	1204	1163	1036	984	883						1.86
Namingha	14	12	11	11	11	11	874		3027	2704	1961	1743	1686	1561	1422	1372	1234	1175	820						1.82
KOOTINGAL	25	16	15	15	15	15	1150		1742	1646	1326	1289	1229	1214	1103	1066	944	812	626						1.62

Section timing points. Stations in capitals are staff stations, lower case stations are intermediate locations.

**Running Times**  
Sectional running times are related to the LOADS & CONDITIONS tables. Times listed with an 'a' (e.g. 8a) are arrival times. i.e. time is allowed to stop from the previous station and starting time is allowed towards the next station. All other times are passing times. In columns where there are no running times and only two dots .. Appear the next running time shown beneath the dots will be the total running time. When a train is required to stop at a location that has passing times, then add ONE minute to that locations passing time, then add a further TWO minutes into the next section. E.g. Tamworth to stop Namingha = 12 minutes Namingha to arrive Kootingal - 17 minutes

Column used to determine trailing tonnage in conjunction with the TRAILING TONNAGE TABLE located page 2 General Instructions - SECTION 4 Train Marshalling. The letters DG in this column = Down Grade

**HOW TO DETERMINE DRAW CAPACITY TONNAGE**

1. Check vehicle Draw Capacity column in LOCOMOTIVES AND ROLLING STOCK DATA table

**Manildra Flour – Freight Rolling Stock**

CODE	DESCRIPTION	CLASS	MAX GROSS MASS TONNES	TARE TONNES	LENGTH METRES	DRAW CAPACITY	BRAKE TYPE	NOTES See Page 1
MGFH	Grain hopper	C	100	26.5	17.8	1.80	B4	1-4M

For Ruling Grade Detail refer to RAS General Information Clause 2.7 Ruling Grades

**Trailing tonnage table**

DRAW-CAPACITY	GRADE 1 :																					
	30	33	35	40	45	48	66	70	72	75	77	80	85	90	95	100	110	120				
0.05	94	103	109	123	136	144	150	163	175	190	200	205	212	216	223	235	246	257	267	288	308	
1.75	2098	3603	3802	429			6657	6996	7163	7444	7575	7817	8214	8602	8982	9353	10073	10764				
1.80	2098	3603	3802	429			7623	791	8040	8449	8648	9238	9621	10361	11071							
1.25	3489	3609	4019	453			7038	7396	7573	7835	8007	8264	8683	9094	9495	9888	10649	11378				

**MAXIMUM LENGTH OF TRAINS / BRAKE TYPE**

1. The length of a train is the overall length of a train including all locomotives whether powering, off line, dead attached or banking. The train must also be covered by an access agreement between the Track Access Provider and the Operator, which will indicate the trains maximum length, motive power and maximum speed. The maximum length of trains also depends upon draw capacity (see HOW TO DETERMINE DRAW CAPACITY TONNAGE table) and the brake equipment type (see Step 2) that is fitted to the vehicles

2. Reference must be to the LOCOMOTIVE AND ROLLING STOCK DATA pages to determine the brake type (i.e. B1, B2, B3 or B4.) If no brake type is listed then assume B1 type. When a train is being marshalled at its point of origin, remmarshalled or has vehicles attached en route the Brake type list must be checked to ensure limits are not exceeded.

**Manildra Flour – Freight Rolling Stock**

CODE	DESCRIPTION	CLASS	MAX GROSS MASS TONNES	TARE TONNES	LENGTH METRES	DRAW GEAR CAPACITY	BRAKE TYPE	NOTES See Page 1
MGFH	Grain hopper	C	100	26.5	17.8	1.80	B4	1-5M

3. Check this table to determine the allowable position of the vehicles in a train.

Brake type	Allowable vehicle position in train
B1	Any position in first 900 metres of train
B2 and B3	Any position in first 1500 metres of train
B4	Any position in an train

FORMAT OF LOCATION OF SPEED SIGN TABLE

Location of Speed signs

LOCATION	KILO-METRAGE	DOWN		UP	
		NORM	XPT	NORM	XPT
PENRITH	55.086				
	55.500	--	--	75	80
EMU PLAINS	57.350	100	115	--	--
	57.439				
	58.640	--	--	75	80
	58.945	70	75	--	--
	60.965	--	--	65	70
	61.080	75	80	--	--
	61.585	--	--	40	*65MU
	61.975	--	--	40	*65MU
LAPSTONE	61.980	70	75	--	--
	63.617				
	65.100	65	70	65	70
	65.800	--	--	60	65
GLENBROOK	67.080				

LOCATION	KILO-METRAGE	DOWN		UP	
		NORM	XPT	NORM	XPT
BLAXLAND	71.484				
	72.450	--	--	75	80
	72.740	65	70	--	--
WARRIMOO	74.296				
	75.300	--	--	65	70
	75.560	70	75	--	--
Up board on Down Main	77.040	--	--	X15	X25
	77.250	60	65	--	--
	77.300	--	--	70	75
VALLEY HEIGHTS	77.410				
Up board on Down Main	79.000	--	--	65	70
	79.000	--	--	60	65
	79.420	50	60	--	--
	79.460	--	--	X25	X35
SPRINGWOOD	79.669				
	101.930	--	--	70	80

Station or location name

Kilo-metrage from Sydney

A white background speed sign with the letters MU alongside the numerals, by itself or under a yellow background speed sign, applies only to XPT, Xplorer, Endeavour trains and Multiple unit trains (NSG604).

'Wrong Road' speed signs shown in italics.

'Normal' speed signs apply to all trains except for XPT, Xplorer, Endeavour and Millennium type trains.

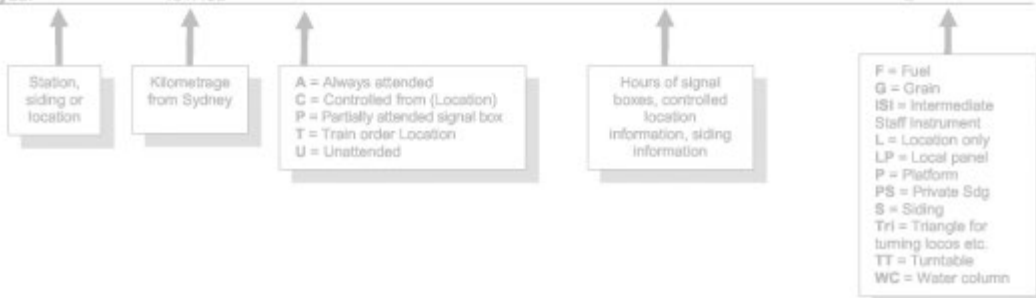
Speed signs indicate the maximum speed between signs. 'X' speed signs (e.g. X40) indicate the maximum speed through turnouts. The maximum speed through the sharp curves of junctions, crossovers and turnouts is 25 kilometres per hour, unless otherwise shown.

XPT, Xplorer, Endeavour and Millennium trains run to XPT speed signs to the maximum speed specified under the listing of **MAXIMUM SPEED OF LOCOMOTIVES AND ROLLING STOCK**. XPT, Xplorer, Endeavour and Millennium trains run to 'Normal' speed signs where XPT signs are not provided.

FORMAT OF STATION DATA TABLE

Station Data

Station	Kilo-metrage	Signal box Status	Hours of signal box	Facilities
Lithgow	155.781			P, TT
Wallerawang	171.261	C	Controlled from Western Rail Management Centre Orange	LP,P
Power Hse Sdg		U		S
Austen & Butts Sdg	175.827	U		S
Rydal	181.402			L



MULTI LISTING OF ROLLING STOCK (Section 10 – General Instructions)

Pacific National – Freight Rolling Stock

CODE	DESCRIPTION	CLASS	MAX GROSS MASS TONNES	TARE TONNES	LENGTH METRES	DRAW CAPACITY MN	BRAKE TYPE	NOTES
------	-------------	-------	-----------------------	-------------	---------------	------------------	------------	-------

Covered Wagons								
RBFX	Box van	C	75	30	23.7	1.30	B3	
			80	30	23.7	1.30	B3	a

Coiled Steel Wagons								
RCAF	Coil ex NODY	C	76	24	15.1	1.80	B3	
			80	24	15.1	1.80	B3	a
			92	24	15.1	1.80	B3	b
RCDX	Coil	C	76	23	14.9	1.30	B1	

When vehicles are single entry listed and no notes are shown in the NOTES column, the MAXIMUM GROSS MASS TONNES column shows the maximum gross mass permitted

When vehicles are multi listed e.g. RCAF the following will apply:  
 1. When loaded up to 76 tonnes normal working will apply.  
 2. When loaded over 76 tonnes and up to 80 tonnes Note a will apply  
 3. When loaded over 80 tonnes and up to 92 tonnes Note b will apply

NHOF	Ex NHOH fitted with X type bogies	C	76	23	17.1	1.80	**B3	
			80	23	17.1	1.80	**B3	a
NHPH	*8 permanently coupled coal wagons	G	120	23	*129.2	2.45	**B4	#
		B	Empty	23	*129.2	2.45	**B4	#

When 'Empty' is shown in the 'MAX GROSS MASS TONNES' column the vehicles will operate to the maximum speed shown for the nominated classification, i.e. NHPH operate to Class B speeds when empty.

\*\* symbol indicates vehicle is fitted with two pipe brake system. Refer to SECTION 2 – ILLAWARRA SECTION for instructions relating to the operation of two pipe vehicles between Moss Vale and Unanderra. All other vehicles are single pipe brake system.