Division / Business Unit: Safety, Engineering & Technology
Function: All Disciplines
Document Type: Procedure

Route Access Standard

Introduction

Applicability

ARTC Network Wide

SMS

Publication Requirement

External

Primary Source

Previous Version + RACNs

Document Status

Version #	Date Reviewed	Prepared by	Reviewed by	Endorsed	Approved
2.3	05 Aug 21	Operations Standards Team	Stakeholders	Manager Standards	General Manager Technical Standards 18/08/2021

Amendment Record

Amendments to the RAS are published at the following link
https://www.artc.com.au/uploads/RAS_Amendments_Register.xlsx

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1 Foreword

The terms and conditions upon which access is granted to the Australian Rail Track Corporation (ARTC) Network are specified in an Access Agreement negotiated between ARTC and the Operator. Operators seeking to operate on the ARTC Network also require accreditation in accordance with the Rail Safety Act for each state in which operation is intended.

The Route Access Standard (RAS) contains interface requirements for access to the ARTC Network and has been published by ARTC for use by current and potential Operators for the development of their operating plans.

This standard contains important infrastructure and operational information about the ARTC Network. Information about rolling stock provided in this document is limited to addressing the critical interfaces between rail traffic and the infrastructure, or with other rail traffic. Further rolling stock information applicable in New South Wales is provided in the TOC manual and TOC Waivers.

Operators must develop and maintain documentation specific to the requirements of their operations and respective safety management system.

Operator documentation should include, but is not limited to:

- rolling stock fleet capability and constraints
- rolling stock maintenance, provisioning and areas for stabling
- terminal operations and areas for loading, unloading, shunting and marshalling trains
- train crewing, safeworking, route knowledge, train handling, training and competency
- environmental requirements
- Occupational Health and Safety requirements (including policies relating to drug, alcohol and fatigue management)
- risk management.

1.1 Document Overview

The RAS is divided into the following two sections:

- General Information
    - Appendix A Rolling Stock outlines & loading guidelines
    - Appendix B Train Numbering
- Section Pages.

The RAS addresses the ARTC Network in terms of routes that may cross several corridors as train paths for purchase by Operators. It is intended to aid the Operator to ensure trains are planned, constructed, inspected, maintained, loaded and operated in accordance with the route attributes.

For information about adjacent networks, Operators should refer to the appropriate Rail Infrastructure Manager.

1.1.1 General Information

The General Information section of the RAS outlines the current status of the ARTC Network infrastructure in a series of instructions, diagrams and tables that express the ARTC Network capabilities in terms of supporting rail traffic.

1.1.2 Section Pages

The RAS Section Pages are divided into the following three networks:

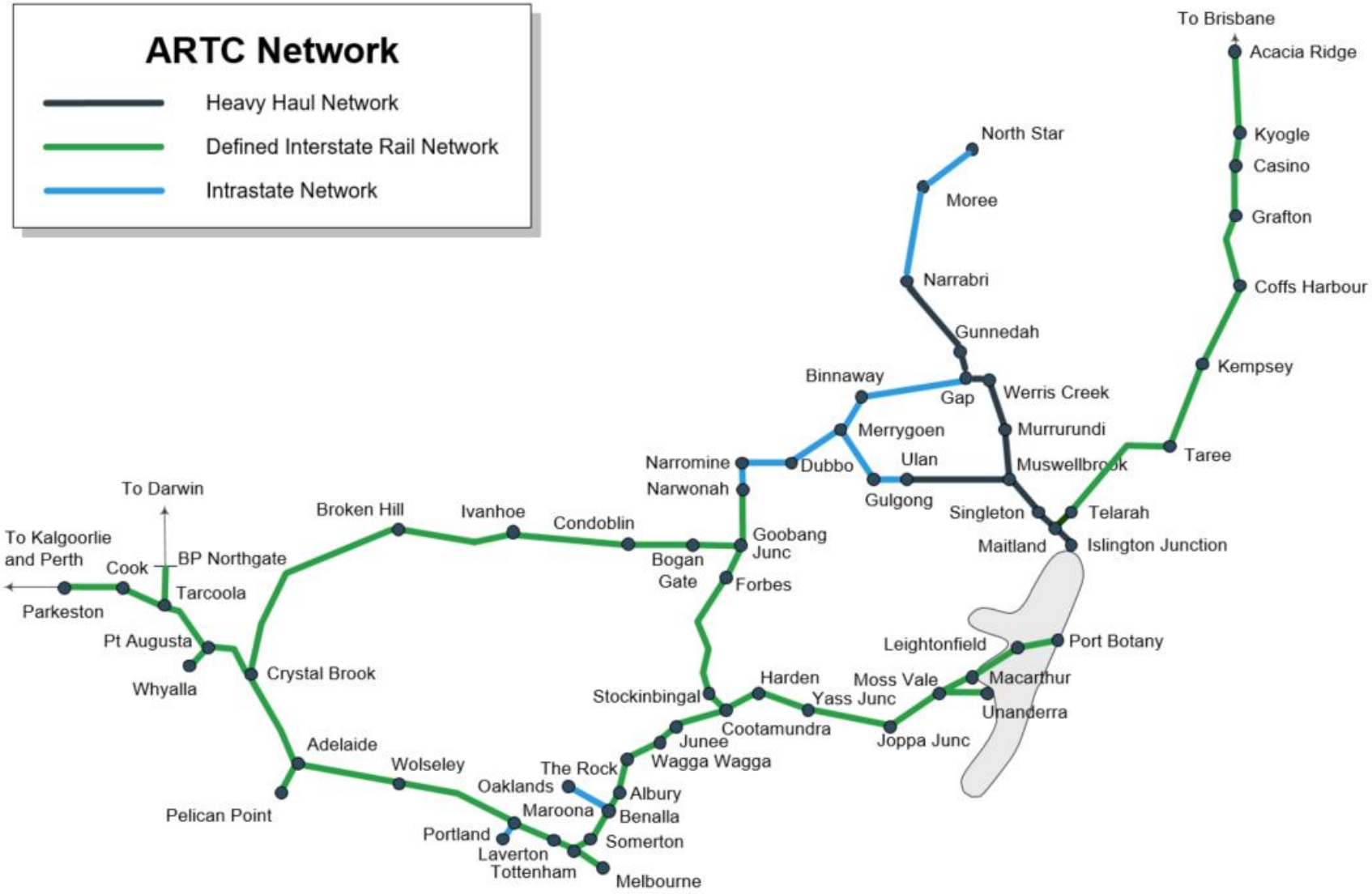
- Defined Interstate Rail Network
- Heavy Haul Network
- Intrastate Network.

Each network is represented by a series of sections. These sections contain information about the current status of the ARTC Network and include:

- line maps
- route capacity tables
- location of speed signs or permanent speed restrictions.
- these sections may also include special access conditions.

Section pages may be used by Operators for operations and to instruct rail traffic crews in route knowledge and driving competencies.

Figure 1.1 – ARTC Network Map



2 Glossary

Term	Meaning (Source of definition)
May	The term 'may' indicates the existence of an option (AS4292.1 Railway Safety Management).
Shall	The word 'shall' is to be understood as mandatory (AS4292.1 Railway Safety Management).
Should	The word 'should' is to be understood as non-mandatory (i.e. advisory or recommended) (AS4292.1 Railway Safety Management).

Term	Meaning (Source of definition)
Above rail	Rail functions for which an Operator is responsible.
Access Agreement	The contract that specifies the terms and conditions for access to the ARTC Network by an Operator.
Adjoining Network	A Network that abuts the ARTC network eg John Holland Network, Railcorp Network, and Brookfield Rail Network.
Air brake	A braking system activated by a change of air pressure.
Allocation	The process of assigning rolling stock for trains.
ARTC	Australian Rail Track Corporation.
AS No: xxxx	Australian Standard No Series.
Audible Warning Device (AUD)	Track detonator to warn drivers of a hazard ahead.
Automatic air brake	A braking system where the loss of air pressure (e.g. brake pipe pressure) automatically results in an emergency brake application.
Block Working	Trains cannot collide with each other if they are not permitted to occupy the same section of track at the same time. Railway lines are divided into sections known as blocks. In normal circumstances, only one train is permitted in each block at a time.
Brake holding test	A test that proves the brakes on the rear three vehicles, and any other tested vehicles, will remain applied for a long enough period of time in the event of a breakaway, to allow the train crew to reach these vehicles and apply the handbrakes, in order to secure the train.
Brake inspection	A test to ensure that all brakes will apply and release in response to brake pipe pressure fall and rise, brake pipe piston travel does not exceed limits and brake force causes the brake shoes to be forced against the wheels and that all handbrakes are released.
Brake pipe continuity test	A test to ensure that the brake pipe is continuous through the train consist.
Brake pipe leakage test	A test to determine whether there are excessive air leaks in the train that may interfere with the operation of the air brake system and confirm that only one brake valve controls the train. With a full service brake reduction and the brake

Term	Meaning (Source of definition)
	pipe isolated, the maximum allowable leakage in the brake pipe is 35 kPa per minute.
Brake Type	B1= Old style brass piston and slide triple valves (ITV and AF). B2= Westinghouse WF3 diaphragm triple valves (generally a replacement for the B1). B3= Westing house WF2 or Davies and Metcalfe ESR type triple valve (relayed). B4= Westinghouse WF4 or WF5 triple valves (relayed). E1 = Electro controlled pneumatic brake.
COP	Code of Practice.
Compensated grade	The allowance for the friction in a curve on a grade expressed as an increased steepness of the grade.
Non Compensated grade	The actual grade of the track.
DED	Dragging Equipment Detector
Diesel Multiple Unit (DMU)	A distributed power passenger train made up of similar diesel powered and non-powered vehicles capable of carrying passengers and operating as a train.
DIRN	Defined Interstate Rail Network.
Disabled train	A train with a failure such that it cannot complete its journey under its own power.
Distributed power (DP)	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. WDP = wireless distributed power.
Draw capacity	The strength of a vehicle (couplers, draft gear, underframe, etc.) used to determine the load that can be hauled behind the vehicle.
Emergency cock	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 to as an emergency brake pipe tap.
End of train marker (EOTM)	A device fitted to the trailing end of the last vehicle of a train.
ECP brake	Electro controlled pneumatic brake.
Full train inspection	A locomotive hauled train inspection that includes loading and security checks, full mechanical inspection, brake pipe leakage test, air brake inspection and test, brake holding and pipe continuity test.
Handbrake	A mechanical device used to secure a rail vehicle against movement. Handbrake includes a spring parking brake.
HBD, HWD	Hot Bearing Detector, Hot Wheel Detector
HHN	Heavy Haul Network.
HP grade inspection	An inspection that must be carried out on freight trains that are to descend

Term	Meaning (Source of definition)
	grades of 1 in 33 or greater and are not fitted with exhaust chokes on 80 per cent of the train's mass.
ICAPS compatible radio	The train radio that is required for train movements on some line sections where ICAPS points operation is utilised.
IN	Intrastate Network.
Light locomotive	One or more locomotives not attached to another vehicle.
Loading outline	The maximum height and width to which rail vehicles can be loaded for a particular route, as prescribed in the Route Access Standard.
Locomotive	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.
Manifest	The listed order of the vehicles arranged to make up a complete train.
Marker lights	Lights that indicate the front or rear of the train. (can determine route)
Marshall	To arrange the order of vehicles in a train's consist.
Mobile fuelling	The process of fuelling rolling stock from a road vehicle tanker.
Modified continuity test	A test to ensure the correct brake operation on the first three vehicles beyond the furthermost amalgamation point when a locomotive or vehicles are attached to or detached from a train.
Multiple unit locomotive	Two or more locomotives marshalled together to provide the power to move itself or other vehicles.
NTCS / ICE	National Train Control System. The train radio that is required for train movements on some line sections.
Network control	The control and management of all rail operations on the ARTC Network.
Network procedures	Procedures issued by ARTC for the safe conduct of work on the ARTC Network. To be read in conjunction with network rules.
Network Rules	Rules issued by ARTC to mandate the requirements for safe operation on the ARTC Network.
Network User	A Person / Company accessing the ARTC network by reason of access agreement or maintenance agreement or other authority to be on the Network.
Operator	An organisation that manages operates or maintains rail traffic on the ARTC Network pursuant to an Access Agreement.
Operator representative	A person authorised by an Operator to act on the Operator's behalf.
Operator specific procedure	A set of instructions written specifically for use by that organisation.
Out of gauge (OOG)	A vehicle or load exceeding the loading outline for a particular section of track.
Out of gauge loading	Refer to Out of gauge.
Out of gauge train	A train with rolling stock or loading that is out of gauge.
Over-length train	A train exceeding the network infrastructure limits for train length.
Path	Refer to Train path.
Programmed	Regular vehicle or train maintenance cycle based on a fixed time or distance

Term	Meaning (Source of definition)
Preventative Maintenance (PPM)	travelled to ensure that vehicles remain fit for use on the ARTC Network for at least the duration of the PPM cycle.
Qualified worker	A worker certified as competent to carry out the relevant task.
RAILBAM	Railway Bearing Acoustic Monitor
RAILSQAD	Railway Squeal Acoustic Detection System
Rail Safety Regulator	The person responsible for rail safety regulation and compliance in each of the Jurisdictions (TA44 Incident Management Manual).
Rail safety worker (worker)	A person performing or responsible for safety related work. The person can be a paid member of staff of the railway, a contractor, sub-contractor, an employee of either, or a volunteer.
RAS	Route Access Standard.
Registration and warranty	The formal process for Operators to register and warrant rolling stock data with ARTC prior to being permitted to operate on the ARTC Network.
RISSB	Railway Industry Safety and Standards Board.
Rolling stock	Any vehicle which operates on or uses a railway track, excluding a vehicle designed for both on and off-track use when not operating on the track (AS4292.1 Railway Safety Management).
Rolling stock outline	The three dimensional size of a railway vehicle including its movement that consists of three specific parts; the static outline, the basic kinematic outline and the swept kinematic outline (AS 7507 RISSB Rolling Stock Outlines).
Route Access Condition Notice (RACN)	A notice of changes or exceptions to the requirements specified in the published Route Access Standard. The Route Access Condition Notice provides the conditions by which the non-standard working is permitted on the ARTC Network.
Ruling grade	The maximum grade on a section of track used by the operator to determine the motive power required for a train and the load that can be hauled on that section of track.
Safeworking rules and procedures	Rules and procedures issued by ARTC to mandate the requirements for safe operation.
Safeworking system	An integrated system of procedures and technology for the safe operation of trains and the protection of people and property on, or in the vicinity of the railway (CoP for the DIRN).
Scaled wheel	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).
Sectional running times	The train running times between one location and the location in advance.
Skidded wheels	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).
Special access conditions	Access conditions that are unique to an area, as defined in the Route Access Standard Section Pages.
Standard Operating Procedure	Refer to Operator specific procedure.

Term	Meaning (Source of definition)
TBOGI	Truck Bogie Optical Geometry Inspection (TBOGI)
TCR	Train Control Report
Thermal cracks	Cracks in the running surface and adjacent areas of a wheel, caused by the thermal effect of heating and cooling resulting from on-tread friction braking.
TOC	The ARTC Train Operating Conditions Manual Sept 2004 including all published TOC waivers until the issue of the Route Access Standard (RAS) Stage 2
Tonnage signal	A signal at the foot of a rising grade, fitted with a sign that directs drivers of prescribed trains.
Track	The combination of rails, rail connectors, sleepers, ballast, points and crossings, and substitute devices where used (AS4292.1 Railway Safety Management).
Track circuit	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.
Track maintenance vehicle	A vehicle, usually self-propelled, used mainly for inspecting and maintaining track and infrastructure.
Track speed	The allowable maximum train speed for a portion of track.
Train	A single unit of rolling stock, or two or more units of rolling stock, including a locomotive or other self-propelled unit coupled together to operate on the track as a single unit (ARTC Access Agreement).
Train consist	A group of vehicles coupled together to form a train.
Train number	A train or run number used to provide unique identification of a train.
Train parameters	The properties of a train the Operator is required to document as part of the marshalling process.
Train path	The series of network segments over a particular interval through which a train can travel and may include stopping points and intervals and fuelling stations and other set down or changeover points (ARTC Access Agreement).
TTM	Train Transit Manager
Vehicle	Any item of rolling stock that can operate on rail
Wayside monitoring device	A device positioned on the rail network used to provide alerts of rolling stock or track infrastructure faults or anomalies
WCM	Wheel Condition Monitor
Xplorer/Endeavour	NSW Trains Diesel Multiple Unit.
XPT	NSW Trains Express Passenger Train.
WOS	Minimum Operation Standards for Rolling Stock.