Manual

Train Operating Conditions (TOC) Manual – Division Pages

Version 22.0

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Document history

Version	Summary of changes
1.0	First issue (December 2013)
2.0	Second issue (December 2014)
3.0	Third issue (April 2015)
4.0	Fourth issue (August 2015)
5.0	Fifth issue (December 2015)
6.0	Sixth issue (April 2016)
7.0	Seventh issue (August 2016)
8.0	Eighth issue (December 2016)
9.0	Ninth issue (April 2017)
10.0	Tenth issue (August 2017)
11.0	Eleventh issue (December 2017)
12.0	Twelfth issue (April 2018)
13.0	Thirteenth issue (August 2018)
14.0	Fourteenth issue (December 2018)
15.0	Fifteenth issue (April 2019)
16.0	Sixteenth issue (August 2019)
17.0	Seventeenth issue (December 2019)
18.0	Eighteenth issue (April 2020)
19.0	Nineteenth issue (August 2020)
20.0	Twentieth issue (December 2020)
21.0	Twenty-first issue (April 2021)
22.0	Current issue (August 2021)

Preface

The Asset Management Branch (AMB), formerly known as Asset Standards Authority (ASA) is a key strategic branch of Transport for NSW (TfNSW). As the network design and standards authority for NSW Transport Assets, as specified in the *ASA Charter*, the ASA identifies, selects, develops, publishes, maintains and controls a suite of requirements documents on behalf of TfNSW, the asset owner.

The ASA deploys TfNSW requirements for asset and safety assurance by creating and managing TfNSW's governance models, documents and processes. To achieve this, the ASA focuses on four primary tasks:

- publishing and managing TfNSW's process and requirements documents including TfNSW plans, standards, manuals and guides
- deploying TfNSW's Authorised Engineering Organisation (AEO) framework
- continuously improving TfNSW's Asset Management Framework
- collaborating with the Transport cluster and industry through open engagement

The AEO framework authorises engineering organisations to supply and provide asset related products and services to TfNSW. It works to assure the safety, quality and fitness for purpose of those products and services over the asset's whole-of-life. AEOs are expected to demonstrate how they have applied the requirements of ASA documents, including TfNSW plans, standards and guides, when delivering assets and related services for TfNSW.

Compliance with ASA requirements by itself is not sufficient to ensure satisfactory outcomes for NSW Transport Assets. The ASA expects that professional judgement be used by competent personnel when using ASA requirements to produce those outcomes.

About this document

This Train Operating Conditions (TOC) Manual is published by the ASA to provide an update from the April 2021 issue of the TOC Manual.

This TOC Manual aims to provide a single reference and technical guidance for train operations on the TfNSW Metropolitan Heavy Rail network.

The content, information, and data within this TOC Manual are derived from updates since the last edition of 11 May 2021. The information is compiled from a number of sources. The ASA performs limited validation of this information as it is deemed to be sourced from competent organisations.

This August 2021 issue of the TOC Manual comprises three parts as follows:

- TS TOC.1: 2021 issue 2
- TS TOC.2: 2021 issue 2; this document

- TS TOC.3: 2021 issue 2

As the ASA continues to evolve, future iterations of the TOC Manual and the information contained within it may be made available in different formats and delivery mechanisms to facilitate ease of access and usability.

Table of contents

Introduction

This document contains the Division pages of the Train Operating Conditions (TOC) Manual, which shall be read in conjunction with the relevant standard working timetables for the purpose of safe train operations and is applicable to all freight, passenger, and infrastructure maintenance operations on the TfNSW Metropolitan Heavy Rail network.

The August 2021 issue of the TOC Manual comprises three parts:

- TS TOC.1: 2021 issue 2 *Train Operating Conditions (TOC) Manual – General Instructions*
- TS TOC.2: 2021 issue 2 *Train Operating Conditions (TOC) Manual – Division Pages*; this document
- TS TOC.3: 2021 issue 2 *Train Operating Conditions (TOC) Manual – Track Diagrams*

This document, TS TOC.2: 2021 issue 2, *Train Operating Conditions (TOC) Manual – Division Pages*, contains the following:

- Northern Division Pages
- Western Division Pages
- Illawarra Division Pages
- Sydney Metropolitan Area Division Pages
- Passenger Train Operating Condition Pages
- Coal Working Pages

TS TOC.1: 2021 issue 2, *Train Operating Conditions (TOC) Manual – General Instructions*, contains the following:

- General Instruction Pages

TS TOC.3: 2021 issue 2, *Train Operating Conditions (TOC) Manual – Track Diagrams* contains the following:

- Track Diagrams

Purpose

The TOC Manual specifies conditions for the operation of trains and rolling stock on the TfNSW Metropolitan Heavy Rail network.

Scope

The TOC Manual describes the network, defines operating conditions for trains and rolling stock, and lists all rolling stock authorised to operate on the TfNSW Metropolitan Heavy Rail network.

The TfNSW Metropolitan Heavy Rail network is bounded by Newcastle Interchange (165.746km), Woodville Junction (163.981 km and 164.045 km), Bomaderry (153.630 km), Unanderra (91.080 km), Macarthur (57.965 km), and Bowenfels (158.800 km) but does not include the South Sydney Freight Line and Metropolitan Freight Network (bound by Marrickville 6.370 km, Flemington South Junction 18.909 km, and Sefton Park East Junction 21.285 km).

In addition Light Rail Networks and Metro Networks are not included in the TfNSW Metropolitan Heavy Rail network.

Application

The TOC Manual is to be used by train planners, train timetablers, train control personnel, and train crews, and shall be read in conjunction with the relevant Safeworking rules and procedures.

Reference documents

Transport Standards

Available from the TfNSW web site; www.transport.nsw.gov.au.

- TS TOC.1: 2021 issue 2 *Train Operating Conditions (TOC) Manual – General Instructions*
- TS TOC.3: 2021 issue 2 *Train Operating Conditions (TOC) Manual – Track Diagrams*

See TS TOC.1: 2021 issue 2 for further reference documents.

Terms and definitions

See TS TOC.1: 2021 issue 2 *Train Operating Conditions (TOC) Manual – General Instructions*.

Summary of changes

Table 1 provides a summary of changes to the content of this section of the manual since its previous publication. Changes to front matter, formatting, branding, and governance are not included.

Table 1 - Summary of changes from April 2021 ASA reprint

Area of manual	Page	Section	Change
13. Northern Division pages	20	Maximum speed of locomotives and rolling stock	Added QL class (203-1070)
13. Northern Division pages	27	Location of speed signs	Amended Gosford speed signs per WN23/24-21 and Lisarow as per WN30-21

Area of manual	Page	Section	Change
13. Northern Division pages	32	Transfer of Heavy Coal locomotives Woodville Junction – Enfield/Chullora and return for wheel lathe attention or maintenance	Removed 5000/5020 class locomotives at 167 t (to and from Chullora/Enfield) from section based on lack of service and 5000/5020 class's handbrake unable hold on 1 in 30 grade, added QL class (203-1070)
14. Western Division pages	36	Maximum speed of locomotives and rolling stock	Added QL class (203-1070)
15. Illawarra Division pages	49	Maximum speed of locomotives and rolling stock	Added QL class (203-1070)
15. Illawarra Division pages	52	DOWN – sectional running times and full sectional loads	Corrected page number reference under the % note for the A1 schedule
15. Illawarra Division pages	54	UP – sectional running times and full sectional loads	Corrected page number reference under the % note for the A1 schedule
15. Illawarra Division pages	61	Emergency working or diversion of container trains Tempe – Unanderra (en route to and from Moss Vale)	Added note to explain Illawarra A1 schedules have taken into account the 15 km/h speed restriction
15. Illawarra Division pages	61	Loads and conditions between Unanderra and 91.080 km (Unanderra – Moss Vale line)	Updated operating conditions as per 204-390
15. Illawarra Division pages	68	Conditions for the operation of self-propelled diesel trains - Unanderra and 91.080 km (en route to and from Moss Vale)	Amend tick error in the UP direction (half traction engines working applicable to Xplorer/Endeavour
16. Sydney Metropolitan Area pages	70	Maximum speed of locomotives and rolling stock - Sydney Metropolitan Area	Added QL class (203-1070)
16. Sydney Metropolitan Area pages	84	Location of speed signs	5b per WN20/21-21, 12 per WN20/21-21, 2e per WN22/23/29/30-21, 7a per WN25/26-21, 3a as per WN29/30-21, 6c as per WN29-21, 4 per WN29/30-21, 5a/5b/6a/8a as per WN32/33-21
17. Passenger train operating conditions	97	Designation of rolling stock	Added Mariyung (NIF) as per 203-1069, amended various sections
18. Coal train working	112	Illawarra coal train loads and running times	Updated Illawarra Up Loads per 204-390

Page layout

Format of division pages

Version December 2016

PAGE LAYOUT

FORMAT OF DIVISION PAGES

MAXIMUM SPEED OF LOCOMOTIVE AND ROLLING STOCK

ITEM 1 *Sections*

ITEM 2 *Classification of tracks*

ITEM 3 *Maximum speed of locomotives*

ITEM 4 *Multiple locomotive working*

ITEM 5 *Classification of freight vehicles*

ITEM 6 *Classification of passenger vehicles*

ITEM 7 *Safeworking systems*

ITEM 8 LINE MAP
- Double track
- Single track
- Subsection break
- Signal Box/ Control centre
- Crossing loop length

ITEM 9 Private siding

14. Western Division pages

Version December 2014

Maximum speed of locomotives and rolling stock

	Penrith – Lithgow DOWN MAIN	Lithgow – Valley Heights UP MAIN	Valley Heights – Penrith UP MAIN
Class of Line	1	1	1
Line Map Reference	A	B	C
LOCOMOTIVES			
Class	Max Speed km/h		
90, TT	N/A	N/A	N/A
31, L, LQ, LZ	100	100	100
92, 93, 8000, 8020, ACC, C, CEY, CF, GWA, GWU, LDP10, RL, SCT, TT100, WH, XRN	115	115	115
82, CLP, GL NR	115	115	115
14, 81, ALF, AN, BL, CLF, G, VL	115	115	115
42, 80, 80a, B, DL	115	115	115
18	90	90	90
442, 442a, 700, GM(12), S, X	115	115	115
22, 421, 422, 44, 45, 45a, 800, DC, EL, FL, GM(1), HL	115	115	115
43, 44a, 930	115	115	115
423	80	80	80
D, K, T	100	100	100
47, 48, 48200, 48a, 49, 830, 900, GPU, MM, PL	100	100	100
73 (c)	70	70	70
46, 86 Electric	100(b)	100(b)	100(b)
Multiple Locomotive working	4	5	4
FREIGHT			
Class A	115	115	115
Class B	100	100	100
Class C	80	80	80
Class D	65	65	65
Class E	80	80	80
Class F	65	65	65
Class G	N/A	N/A	N/A
PASSENGER			
XPT	160	160	160
XPLORER	145	145	145
DIESEL RAILCARS	115	115	115
LOCO HAULED	115	115	115
		(a)	

NOTES

(a) See instructions contained in *General Instructions* for operation of trains and light locomotives over the section Katoomba to Valley Heights.

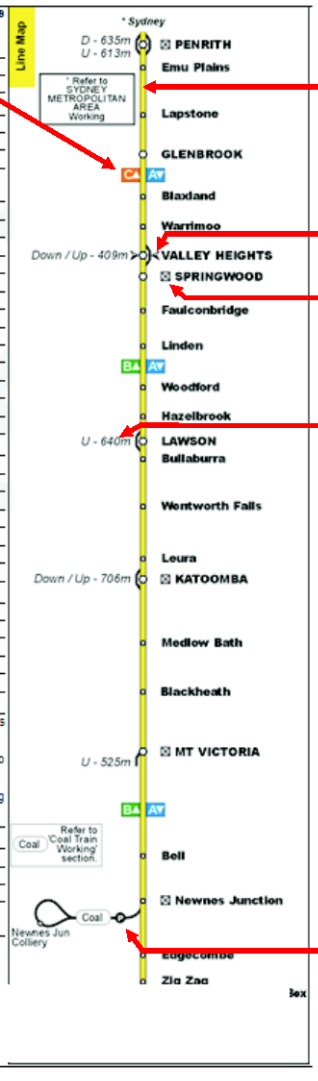
(b) Applies to SINGLE and distributed locomotives (separated by at least 70 metres of train). No OHW restrictions apply. Both pantographs may be raised.

(c) Only locomotives fitted with vigilance control system are approved to operate outside shunting yards.

SAFEWORKING SYSTEMS

Penrith – Edgecombe	#Rail Vehicle Detection
Edgecombe – Zig Zag	Rail Vehicle Detection (Bi-directional)
Zig Zag – Lithgow Coal Stage Signal Box	Rail Vehicle Detection
Lithgow Coal Stage Signal Box – Lithgow Yard Signal Box	Rail Vehicle Detection

#Valley Heights to Springwood – Two way running Down Main



Format of division pages – explanation

April 2015

Table 2 explains the format of the division pages.

Table 2 - Format of division pages – explanation

Item	Label	Description
Item 1	Divisions	The Train Operating Conditional Manual comprises the Western, Northern, Illawarra, and Metropolitan Divisions. Each division provides the condition for operation of locomotives and rolling stock.
Item 2	Classification of track	The class of track will affect the speed and types of locomotives and rolling stock authorised to run over the various sections.
Item 3	Maximum speed of locomotives	Identifies locomotives and maximum speeds approved for that section of track. The letters N/A indicate these locomotives are not approved to run over this section of track.
Item 3	Operation of unlisted locomotives	Refer to the Asset Standards Authority for authorisation.
Item 4	Multiple locomotive working	The columns associated with locomotives headed “MULTIPLE LOCOS’ shows the maximum number of locomotives powering that may run coupled together in a locomotive group on each relevant section of track. Up to a maximum of 5 locomotives total can be marshalled together in any locomotive group attached to a train. However, the number of locomotives that can be powering within each locomotive group at any given time is indicated in the multiple working section on the respective MAXIMUM SPEED OF LOCOMOTIVES AND ROLLING STOCK page.
Item 5	Classification of freight vehicles	Identifies freight vehicle class and maximum speeds approved for that section of track. The letters N/A indicate these vehicles are not approved to run over this section of track.
Item 5	Operation of unlisted freight vehicles	Refer to the Asset Standards Authority for authorisation.
Item 6	Classification of passenger vehicles	Identifies passenger vehicles and maximum speeds approved for that section of track. The letters N/A indicate these vehicles are not approved to run over this section of track.
Item 6	Classification of passenger vehicles	The grouping Diesel Railcars includes #self propelled diesel trains and Rail Motors. #Refer to Sydney Trains & NSW TrainLink pages for Endeavour/Hunter railcar approval.
Item 6	Operation of unlisted passenger rolling stock	Refer to the Asset Standards Authority for authorisation.
Item 7	Safeworking	This section indicates the safeworking system and the area controlled by that system. When words ‘Yard Working’ appear, the nominated section of track will be worked in accordance with the instructions contained in Sydney Trains Network Rule *NTR 418 Yard limits*.

Item	Label	Description
Item 8	Line map	See list page 12 for details.
Item 9	Private line/siding	A Private (Non TfNSW owned) Line/Siding represented in the Division Pages (Line Map) by "P" is one that is not owned by TfNSW and therefore will not necessarily have operating conditions published in this Manual. 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. For the purpose of train control, to and from a private Line/siding, the operator in securing a train path on the TfNSW Metropolitan Heavy Rail 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. In providing an agreed train path in accordance with the operations protocol, Sydney Trains 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.

Where can locomotives run?

April 2016

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

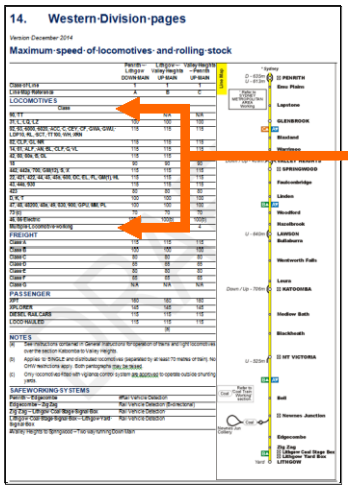
The **LOAD (L)** category is determined by referring to the **General Instruction Pages - SECTION 10 Locomotive and Rolling Stock Data** or the table shown in **SECTION 2 Locomotive Operations.**

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.

Table 65 — Australia Western Railroad — Locomotives

Code	Load Category	Description	Max Speed (km/h)	Live Weight (t)	Length Over Coupling Faces (m)	Draw Capacity (MN)	Horse-power	Remarks	Notes
CLP	L6	Diesel	115	128	20.5	1.80	3000		R11
CLP	L6	Diesel	115	132	20.5	1.80	3000		R11
DC	LT0	Diesel	115	110	18.4	1.80	2000	Ex Pacific National 422 class	R11
LQ / LZ	L5	Diesel	100	134	20.2	1.80	3000	Ex L/31 class. Fuel tanks only to be filled to 10,000 litres	R11
22	L10	Diesel	115	110	18.4	1.80	2000	Ex Pacific National 422 class	R11
31	L5	Diesel	100	137	20.2	1.80	3000	Ex L class.	R11


14. Western Division pages

Maximum speed of locomotives and rolling stock

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

Version December 2014

	SECTIONS	LOCOMOTIVE CLASS = L	LOAD — TONNES SINGLE	DOUBLE	TRIPLE	QUAD	TRAIN DATA VEHICLE CLASS	SECT-RUN TIMES	NOTES
20	SYDNEY METROP – LITHGOW	L13	281	562	843	1124	ABCDE	O4	
21	SYDNEY METROP – LITHGOW	L3/L4	750	1500	2250	3000	ABCDE	D1	
22	SYDNEY METROP – LITHGOW	L5	700	1400	2100	2800	ABCDE	D1	

Indicates sections of track the schedule applies to.

Maximum trailing tonnage permitted per schedule where shown.

Speed Class of vehicle permitted on schedule.

Schedule subgrouping and speed.
Main Line
A = 115kmh
B = 100kmh
C = 80kmh
D = 65kmh

Full Sectional Loads

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

UP — sectional running times and full sectional loads

Version April 2015

	# SECTIONAL RUNNING TIMES						FULL SECTIONAL LOADS LOCOMOTIVE CATEGORIES = L													GRADE
	A1	A2	C1	C2	C3	D1	Loco	AC6	2	3	4	5	6	7	8	9	10	11	12	13	14	
LITHGOW	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
LITHGOW OSBOX	2	2	2	2	2	2	2	4407	3855	3562	3369	3171	2803	2726	2660	2295	2210	2036	1900	1326		1:150
ZIG ZAG	5	6	6	7	10	7	4	1500	1300	1200	1131	1056	926	909	875	750	725	660	615	410		1:40

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.
Running times are shown for the front of the train to pass/arrive/depart a location. The running times into sidings/yards do not include the time taken for the whole train to clear main lines as it is dependent on the length of the train. Train length shall therefore be considered when pathing trains into sidings and yards.

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

Draw capacity tonnage and maximum length of trains / brake type

April 2015

HOW TO DETERMINE DRAW CAPACITY TONNAGE

1. Check vehicle draw capacity in **LOCOMOTIVE AND ROLLING STOCK DATA** table.

Table 107 — Manildra Flour — Freight rolling stock

Code	Description	Class	Max Gross Mass (t)	Tare (t)	Length (m)	Draw Capacity (MN)	Brake Type	Notes
MBAX	Covered wagon (Ex WBAX)	C	76 80	25	18.0	1.30	B3	R1
MHGX	Grain hopper (Ex AHGX)	C	76	21	14.6	1.30	B2	
MQRF	Container flat (Ex AQRF)	C	76	21	14.9	1.30	B1	
MGFH	Grain hopper	C	100	26.5	17.6	1.80	B4	1, 2, 3

UP — sectional running times and full sectional loads

Version April 2015

	#SECTIONAL RUNNING TIMES					FULL SECTIONAL LOADS LOCOMOTIVE CATEGORIES = L													GRADE
	%A1	C1	C2	C4	C5	Loco	AC6	2	3	4	5	6	7	8	9	10	11	12	13	14	
BOMADERRY																					
BERRY		12	13			11a	2766		2227	2104	1976	1743	1699	1650	1422	1372	259	1175	820		1:80
GERRINGONG		..	..			10	2623		2111	1995	1872	1651	1610	1563	1346	1299	191	1112	776		1:76
KIAMA		21	23			9a	2477		1992	1882	1766	1557	1519	1473	1268	1224					1:70

2. Cross reference Grade column with draw capacity column.

3. Find 1.80 in Trailing Tonnage table.

DRAW CAPACITY MN	30	35	40	45	48	50	55	60	66	70	75	77	80	85	90	95	100	110	120
H 1.80										7196	7368	7623	7791	8040	8449	8848	9238	9621	10361	11071
1.85	3489	3809	4019					88	7038	7396	7573	7835	8007	8264	8683	9094	9495	9888	10649	11379
1.90	3583	3912	4128					63	7228	7596	7777	8046	8224	8487	8918	9339	9752	10155	10937	11686

4. This figure **7196 tonnes** indicates trailing tonnage permitted behind a MGFH over the section.

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 **Sydney Trains** and the **Operator**, which indicates 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 made 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, remarshalled or has vehicles attached en route the brake type list must be checked to ensure limits are not exceeded.

Table 107 — Manildra Flour — Freight rolling stock

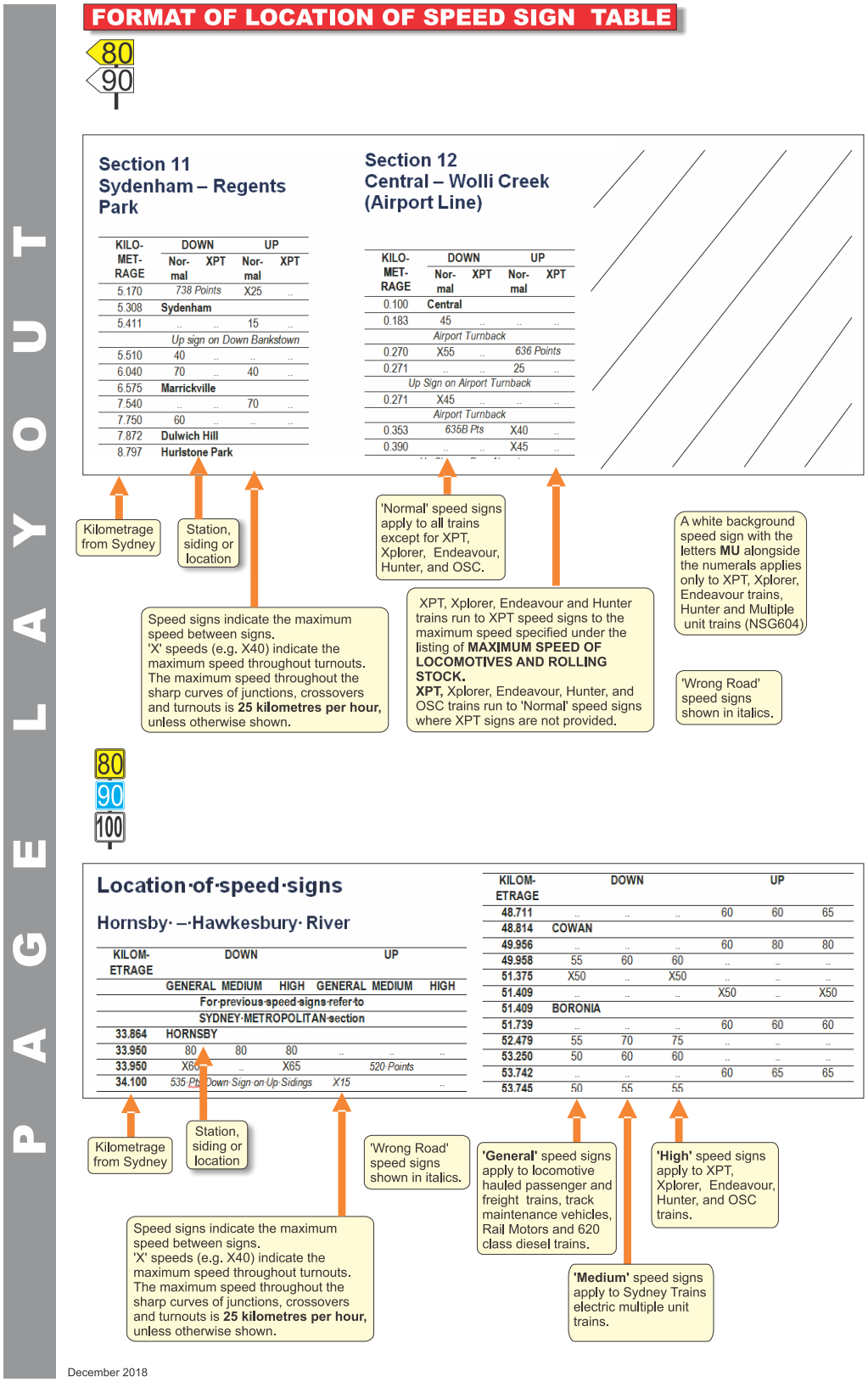
Code	Description	Class	Max Gross Mass (t)	Tare (t)	Length (m)	Draw Capacity (MN)	Brake Type	Notes
MBAX	Covered wagon (Ex WBAX)	C	76 80	25	18.0	1.30	B3	R1
MHGX	Grain hopper (Ex AHGX)	C	76	21	14.6	1.30	B2	
MQRF	Container flat (Ex AQRF)	C	76	21	14.9	1.30	B1	
MGFH	Grain hopper	C	100	26.5	17.6	1.80	B4	1, 2, 3

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 the first 900 metres of train
B2 & B3	Any position in the first 1500 metres of train
B4	Any position in train
E1	Any position in train (all locomotives and wagons ECP braked)

Format of speed sign table

December 2018



Format of station data table and rolling stock data pages

August 2016

FORMAT OF STATION DATA TABLE

Station data

Version 10.0 December 2012

Station	Kilometrage	Signal Box Status	Hours of Signal Box	Facilities
Penrith	55.086	A	Always	P, WC
Emu Plains	57.439		Controlled from Penrith	P
Lapstone	63.617			P

- Station, siding or location
- Kilometrage from Sydney
- **A** = Always attended
  C = Controlled from (location)
  P = Partially attended signal box
  U = Unattended
- Hours of signal boxes, controlled location information, siding information.
- **L** = Location only
  LP = Local panel
  P = Platform
  PS = Private siding
  TT = Turntable
  WC = Water column

FORMAT OF ROLLING STOCK DATA PAGES

Pacific National – Freight rolling stock – grain hoppers

Table 124 – Pacific National – Freight rolling stock – grain hoppers

Code	Description	Class	Max Gross Mass (t)	Tare (t)	Length (m)	Draw Capacity (MN)	Brake Type	Notes
NGDX	Grain	C	73	18.5	14.3	0.90	•□B3	
NGFF	Grain	C	76		14.6	0.75	B2	
NGGF	Grain	A	78		14.3	1.80	B3	
	When loaded from 78 up to a maximum of 81 tonnes gross mass Class E speeds will apply.		81					
NGHF	Grain	C	76	17.8	14.4	1.80	••B4	

- The tare (empty) vehicle or multi-vehicle mass
- Vehicle code
- When the description indicates 'permanently coupled' or 'articulated units' the tonnage shown in the MAXIMUM GROSS MASS TONNES column will be the combined tonnage for all wagons.
- Speed classification
- Maximum vehicle or multi vehicle gross mass permitted on Class 1 track for speed classification. 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.
- Vehicle or multi-vehicle length over coupling faces.
- Maximum draw/buff capacity of the vehicle in Meganewtons
- •• symbol indicates vehicle is fitted with two pipe brake system. All other vehicles are single pipe brake system.
  •□ symbol indicates vehicle is fitted with a main reservoir pipe but it does not feed the brake system.
  This vehicle type can be marshalled anywhere in a conventional two pipe train but it does not necessarily meet the same brake performance.

Section 13

Northern Division pages

13. Northern Division pages

Version August 2021

Maximum speed of locomotives and rolling stock

	Hornsby – Vales Point	Vales Pt – Woodville Junction	Woodville Junction – Newcastle Int.
Class of Line	1	1	1
Line Map Reference	A	B	C
LOCOMOTIVES			
Class	**Max Speed Km/h**		
90, TT(139t), TT100(139t), C44aci(139t)(g)	(a)	60(a,f)	20(c)
31, L, LQ, LZ	100	100	20(c)
1100, 92, 93, 6000, 6020, ACC, C, CEY, CF, CM, CSR, FIE, GWA, GWU, LDP, LDP10, MRL, PHC, QBX, QL, RL, SCT, SSR, TT(134t) TT100 (134t), WH, XRN	115	115	20(c)
82, CLP, GL, NR	115(b)	115	20(c)
14, 81, ALF, AN, BL, CLF, G, VL	115	115	50
42, 80, 80s, B, DL	115	115	50
18	90	90	50
442, 442s, 700, GM(12), S, X	115	115	50
32	100	100	50
1200,22,421,422,44,45,45s,600,DC,EL,FL,GM(1),HL	115	115	50
43, 44s, 930	115	115	50
423	80	80	50
D, K, T	100	100	50
47, 48, 48200, 48s, 49, 830, 900, GPU, MM, PL	100	100	50
73 (e)	70	70	50
46, 86 Electric	100(d)	100(d)	50(d)
59, 32(P) Steam	80	80	50
Multiple locomotive working (powering locomotives horsepower limit per locomotive group)	5 (16000)	U (16000)	U (16000)
FREIGHT			
Class A	115	115	50
Class B	100	100	50
Class C	80	80	50
Class D	65	65	50
Class E	80	80	50
Class F	65	65	50
Class G	N/A	60(f)	N/A
PASSENGER			
XPT	160	160	80
XPLORER	145	145	80
DIESEL RAILCARS	115	115	80
LOCO HAULED	115	115	50

NOTES

U = Unlimited number of locomotives (subject to horsepower limit per locomotive group).

(a) When operating light 90 class locomotives between Woodville Junction and Enfield/Chullora, see Special conditions Page 32 of this section.

(b) NR maximum speed **40 km/h** through Boronia Tunnel No 3 (Down and Up) 54.300km to 54.500km.

(c) Woodville Junction to Hamilton Junction **ONLY.**

(d) Applies to SINGLE and distributed locomotives (separated by at least 70 metres of train). No OHW restrictions apply. Both pantographs may be raised.

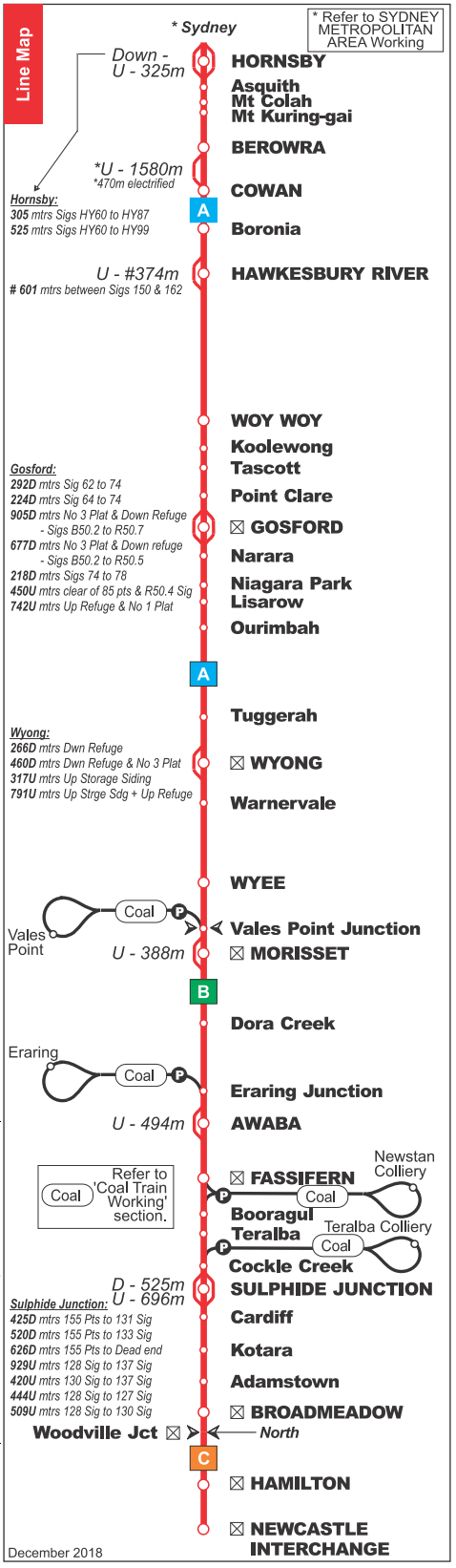
(e) Only locomotives fitted with vigilance control system approved to operate outside shunting yards.

(f) Maximum speed of **50 km/h** (Down and Up) when traversing Dora Ck bridge at 127.025 km.

(g) C44aci(139t) locomotives provisioned between 134t and 139t include 92, 93, 6000, 6020, ACC, CEY, CF, FIE, GWU, MRL, XRN, PHC.

SAFEWORKING SYSTEMS

Hornsby – Cowan	Rail Vehicle Detection
Cowan – Boronia	Rail Vehicle Detection (Bi-directional)
Boronia – Hawkesbury River	Rail Vehicle Detection (Bi-directional)
Hawkesbury River – Hamilton	Rail Vehicle Detection



General - Sectional running times and full sectional loads

Version April 2020

The locomotive-load-run times configurations (DOWN loads and UP loads) published in this section are for existing approved paths in the Standard Working Timetable (SWTT). For configurations that are not listed, the train shall run at the discretion of the train controller, based on the following:

- The trailing load does not exceed the sum of individual locomotive full sectional loads, accounting for load reductions specified in (TS TOC.1 Section 2.11 and 2.12)
- There is capacity on the network (based on the live status and the SWTT/DWTT) for the train controller to allocate additional times for the train if longer journey or sectional running times, or both are foreseen.
- The operator operates to the assigned schedule or under the direction of the train controller to ensure the train's arrival at critical junctions or destinations does not cause train control conflicts to the network.

The sectional running times published are based on RailNet Running Time Profiles (simulations). Train consists (locomotive and trailing loads) used in the simulations are based on the length limits in the train operating length diagram in TS TOC 1 (Section 1.11) with no speed restrictions applied.

Any planned and timetabled sectional running times used in ad hoc paths, Daily Working Timetable, and Standard Working Timetable have additional time added to the published running times (for example recovery time), which should be accounted for by the train controller / planner / programmer as appropriate.

DOWN loads

Version April 2021

			LOAD – TONNES				TRAIN DATA		
	SECTIONS	LOCOMOTIVE CLASS = L	SINGLE	DOUBLE	TRIPLE	QUAD	VEHICLE CLASS	SECT RUN TIMES	NOTES
1	**SYDNEY METROP. – BROADMEADOW**	L2	1000	2000	3000	4000	A	A1	
2	**SYDNEY METROP. – BROADMEADOW**	L7	735	1470	2205	2940	A	A1	
3	**SYDNEY METROP. – BROADMEADOW**	AC6	1000	2000	3000	--	A	A1	
4	**SYDNEY METROP. – BROADMEADOW**	AC6 + L2	--	2750	--	--	AB	B1	# C44ACi or GT46C ACe and NR
5	**SYDNEY METROP. – BROADMEADOW**	AC6 + L2	--	2410	--	--	AB	B1	# C44ACi or GT46C ACe and AN
6	**SYDNEY METROP. – BROADMEADOW**	AC6 + 2 x L2	--	--	4050	--	AB	B1	# C44ACi or GT46C ACe and NR
7	**SYDNEY METROP. – BROADMEADOW**	AC6 + 2 x L2	--	--	3530	--	AB	B1	# C44ACi or GT46C ACe and AN
8	**SYDNEY METROP. – BROADMEADOW**	2 x AC6 + L2	--	--	4200	--	AB	B1	# C44ACi or GT46C ACe and NR
9	**SYDNEY METROP. – BROADMEADOW**	2 x AC6 + L2	--	--	3700	--	AB	B1	# C44ACi or GT46C ACe and AN
10	**SYDNEY METROP. – BROADMEADOW**	L2	1300	2600	3900	5200	AB	B1	
11	**SYDNEY METROP. – BROADMEADOW**	L4	970	1940	2910	3880	AB	B1	
12	**SYDNEY METROP. – BROADMEADOW**	L7	909	1818	2727	3636	AB	B1	
13	**SYDNEY METROP. – BROADMEADOW**	AC6	1500	3000	4600*	--	AB	B1	*
14	**SYDNEY METROP. – BROADMEADOW**	L8+L8+L13	--	--	600	--	ABC	C	
15	**SYDNEY METROP. – BROADMEADOW**	L2	1300	2600	3900	5200	ABCE	C1	
16	**SYDNEY METROP. – BROADMEADOW**	L4	970	1940	2910	3880	ABCE	C1	
17	**SYDNEY METROP. – BROADMEADOW**	L7	909	1818	2727	3636	ABCE	C1	
18	**SYDNEY METROP. – BROADMEADOW**	L9	590	1180	1770	2360	ABCE	C1	
19	**SYDNEY METROP. – BROADMEADOW**	AC6	1500	3000	4600*	--	ABCE	C1	*
20	**SYDNEY METROP. – BROADMEADOW**	AC6 + L2	--	2750	--	--	ABCE	C1	# C44ACi or GT46C ACe and NR
21	**SYDNEY METROP. – BROADMEADOW**	AC6 + L2	--	2410	--	--	ABCE	C1	# C44ACi or GT46C ACe and AN
22	**SYDNEY METROP. – BROADMEADOW**	AC6 + 2 x L2	--	--	4050	--	ABCE	C1	# C44ACi or GT46C ACe and NR
23	**SYDNEY METROP. – BROADMEADOW**	AC6 + 2 x L2	--	--	3530	--	ABCE	C1	# C44ACi or GT46C ACe and AN
24	**SYDNEY METROP. – BROADMEADOW**	2 x AC6 + L2	--	--	4200	--	ABCE	C1	# C44ACi or GT46C ACe and NR
25	**SYDNEY METROP. – BROADMEADOW**	2 x AC6 + L2	--	--	3700	--	ABCE	C1	# C44ACi or GT46C ACe and AN
26	**SYDNEY METROP. – BROADMEADOW**	L3	1200	2400	3600	4800	ABCE	C2	
27	**SYDNEY METROP. – BROADMEADOW**	L4	1131	2262	3393	4524	ABCE	C2	
28	**SYDNEY METROP. – BROADMEADOW**	L5	1056	2112	3168	4224	ABCE	C2	
29	**SYDNEY METROP. – BROADMEADOW**	L6	926	1852	2778	3704	ABCE	C2	
30	**SYDNEY METROP. – BROADMEADOW**	L7	909	1818	2727	3636	ABCE	C2	
31	**SYDNEY METROP. – BROADMEADOW**	L8	875	1750	2625	3500	ABCE	C2	
32	**SYDNEY METROP. – BROADMEADOW**	L9	750	1500	2250	3000	ABCE	C2	
33	**SYDNEY METROP. – BROADMEADOW**	L10	725	1450	2175	2900	ABCE	C2	
34	**SYDNEY METROP. – BROADMEADOW**	L11	660	1320	1980	2640	ABCE	C2	
35	**SYDNEY METROP. – BROADMEADOW**	L12	615	1230	1845	2460	ABCE	C2	
36	**SYDNEY METROP. – BROADMEADOW**	L13	310	615	925	1230	ABCE	C2	
37	**SYDNEY METROP. – BROADMEADOW**	L4	1131	2262	3393	4524	ABCDE	D1	
38	**SYDNEY METROP. – BROADMEADOW**	L10	725	1450	2175	2900	ABCDE	D1	
39	**SYDNEY METROP. – BROADMEADOW**	L13	410	820	1230	1640	ABCDE	D1	
40	**SYDNEY METROP. – BROADMEADOW**	L3	1200	--	--	--	ABCDE	D1	

A full list of approved AC6 locomotives (United Group Ltd – C44ACi, Downer EDI Rail – GT46C-ACe, and CRRC Ziyang – SDA1) is summarised under Table 8 Approved locomotives grouped into load categories – locomotive type AC in TS TOC 1.

* Total trialling load limited to 4500t only if consist contains any SDA1 type AC locomotives.

DOWN – sectional running times and full sectional loads

Version April 2021 (5.14)

	#SECTIONAL RUNNING TIMES (INDICATIVE)							FULL SECTIONAL LOADS LOCOMOTIVE CATEGORIES = L													GRADE
	A1	B1	C	C1	C2	%D1	Loco	AC6	2	3	4	5	6	7	8	9	10	11	12	13	
MFN FLEMINGTON to:	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘
FLEM GDS SOUTH JCT	01:06	01:06	01:06	01:06	01:06	8	01:24	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
FLEM GDS MID JCT	01:36	01:36	01:36	01:36	01:36	1	01:18	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
FLEM MKTS 625 PTS	01:24	01:24	01:24	01:24	01:24	5	01:12	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
NTH STRATHFIELD JCT	04:06	04:06	04:06	04:06	04:06	5	03:54	2904	2536	2339	2211	2077	1833	1786	1736	1495	1442	1324	1236	862	1:85
CONCORD WEST	02:36	02:36	02:06	02:36	02:36	3	01:54	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	Level
RHODES	01:36	01:48	01:36	01:48	01:48	2	01:36	4102	3587	3314	3134	2949	2607	2535	2472	2133	2055	1892	1766	1232	1:134
WEST RYDE	02:18	02:18	02:18	02:18	02:24	2	02:12	2171	1892	1743	1646	1543	1359	1328	1285	1105	1068	977	912	636	1:60
EASTWOOD	02:48	03:30	02:18	03:24	04:00	- -	02:18	1500	1300	1200	1131	1056	926	909	875	750	725	660	615	410	1:40
EPPING	02:54	03:36	02:06	03:30	04:12	11	02:12	1676	1458	1341	1265	1183	1040	1018	980	842	815	743	693	483	1:43
THORNLEIGH	08:24	10:06	05:54	10:12	11:54	16	05:42	1500	1300	1200	1131	1056	926	909	875	750	725	660	615	410	1:42
HORNSBY	04:12	04:36	03:36	04:30	04:48	6	04:18	1500	1300	1200	1131	1056	926	909	875	750	725	660	615	410	1:40
BEROWRA	10:06	11:00	09:18	11:00	11:12	16	08:12	1500	1300	1200	1131	1056	926	909	875	750	725	660	615	410	1:40
COWAN	04:12	04:18	04:18	04:18	04:12	4	04:30	2985	2607	2405	2274	2136	1885	1837	1785	1539	1484	1363	1272	887	1:87
BORONIA X/OVER	03:54	03:54	03:54	03:54	03:48	3	05:36	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
HAWKESBURY RIVER	05:54	05:54	05:42	05:54	05:54	6	07:54	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
WOY WOY	14:18	15:00	13:24	15:00	15:30	18	13:54	1500	1300	1200	1131	1056	926	909	875	750	725	660	615	410	1:40
GOSFORD	07:06	07:12	07:00	07:18	07:12	9	06:54	2326	2028	1869	1766	1656	1459	1425	1380	1188	1147	1051	980	684	1:65
WYONG	14:48	15:48	16:18	17:06	17:06	20	13:36	2477	2161	1992	1882	1766	1557	1519	1473	1268	1224	1122	1047	731	1:71
WYEE	08:54	10:06	10:30	11:12	11:06	15	08:18	2171	1892	1743	1646	1543	1359	1328	1285	1105	1068	977	912	636	1:58
VALES PT JCT	02:48	03:18	03:30	03:54	04:00	- -	02:36	1846	1607	1479	1396	1307	1149	1125	1085	933	902	823	768	536	1:50
MORISSET	03:00	03:06	03:12	03:24	03:24	10	03:18	1846	1607	1479	1396	1307	1149	1125	1085	933	902	823	768	536	1:50
ERARING COLL JCT	08:30	09:18	08:00	09:54	10:36	- -	07:00	1676	1458	1341	1265	1183	1040	1018	980	842	815	743	693	483	1:44
AWABA	04:30	04:48	03:54	04:48	05:06	20	04:48	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
FASSIFERN	04:06	04:12	04:06	04:18	04:18	5	04:36	2171	1892	1743	1646	1543	1359	1328	1285	1105	1068	977	912	636	1:60
NEWSTAN COLL JCT	00:18	00:18	00:18	00:18	00:18	- -	00:36	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	Level
TERALBA COLL JCT	06:42	06:48	06:30	06:54	06:54	- -	07:24	1500	1300	1200	1131	1056	926	909	875	750	725	660	615	410	1:40
SULPHIDE JCT	02:42	02:48	02:36	02:48	02:36	14	02:36	2623	2289	2111	1995	1872	1651	1610	1563	1346	1299	1191	1112	776	1:77
ADAMSTOWN	08:00	08:42	07:18	08:48	09:12	13	08:18	2766	2414	2227	2104	1976	1743	1699	1650	1422	1372	1259	1175	820	1:80
BROADMEADOW YD	01:18	01:18	01:18	01:18	01:18	- -	01:30	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
BROADMEADOW	00:36	00:36	00:42	00:42	00:36	3	00:42	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
WOODVILLE JCT	00:42	00:42	00:36	00:36	00:36	4	00:36	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	Level
ISLINGTON JCT	01:18	01:18	01:18	01:18	01:12	2	01:06	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	Level

\# For other Sydney Metropolitan area running times, refer to diagram in the **'Sydney Metropolitan Division Pages'** *Sydney Metropolitan Area – freight and locomotive running times* (page 74).

% D schedules do not form part of the Standard Working Timetable. It is used for special train path planning

UP loads

Version December 2020

			LOAD – TONNES				TRAIN DATA		
	SECTIONS	LOCOMOTIVE CLASS = L	SINGLE	DOUBLE	TRIPLE	QUAD	VEHICLE CLASS	SECT RUN TIMES	NOTES
1	**BROADMEADOW – SYDNEY METROP.**	L2	1000	2000	3000	4000	A	A1	
2	**BROADMEADOW – SYDNEY METROP.**	L7	735	1470	2205	2940	A	A1	
3	**BROADMEADOW – SYDNEY METROP.**	AC6	1000	2000	3000	- -	A	A1	
4	**BROADMEADOW – SYDNEY METROP.**	L2	1230	2460	3690	4920	AB	B1	
5	**BROADMEADOW – SYDNEY METROP.**	L4	970	1940	2910	3880	AB	B1	
6	**BROADMEADOW – SYDNEY METROP.**	L7	909	1818	2727	3636	AB	B1	
7	**BROADMEADOW – SYDNEY METROP.**	AC6	1500	3000	4600*	- -	AB	B1	*
8	**BROADMEADOW – SYDNEY METROP.**	AC6 + L2	- -	2500	- -	- -	AB	B1	# C44ACi and NR only
9	**BROADMEADOW – SYDNEY METROP.**	AC6 + L2	- -	2350	- -	- -	AB	B1	b
10	**BROADMEADOW – SYDNEY METROP.**	AC6 + 2 x L2	- -	- -	3650	- -	AB	B1	# C44ACi and NR only
11	**BROADMEADOW – SYDNEY METROP.**	AC6 + 2 x L2	- -	- -	3408	- -	AB	B1	b
12	**BROADMEADOW – SYDNEY METROP.**	2 x AC6 + L2	- -	- -	3850	- -	AB	B1	# C44ACi and NR only
13	**BROADMEADOW – SYDNEY METROP.**	2 x AC6 + L2	- -	- -	3641	- -	AB	B1	b
14	**BROADMEADOW – SYDNEY METROP.**	L2	1230	2460	3690	4920	ABCE	C1	
15	**BROADMEADOW – SYDNEY METROP.**	L4	970	1940	2910	3880	ABCE	C1	
16	**BROADMEADOW – SYDNEY METROP.**	L7	909	1818	2727	3636	ABCE	C1	
17	**BROADMEADOW – SYDNEY METROP.**	L9	590	1180	1770	2360	ABCE	C1	
18	**BROADMEADOW – SYDNEY METROP.**	AC6	1500	3000	4600*	- -	ABCE	C1	*
19	**BROADMEADOW – SYDNEY METROP.**	AC6 + L2	- -	2500	- -	- -	ABCE	C1	#C44ACi and NR only
20	**BROADMEADOW – SYDNEY METROP.**	AC6 + L2	- -	2350	- -	- -	ABCE	C1	b
21	**BROADMEADOW – SYDNEY METROP.**	AC6 + 2 x L2	- -	- -	3650	- -	ABCE	C1	#C44ACi and NR only
22	**BROADMEADOW – SYDNEY METROP.**	AC6 + 2 x L2	- -	- -	3408	- -	ABCE	C1	b
23	**BROADMEADOW – SYDNEY METROP.**	2 x AC6 + L2	- -	- -	3850	- -	ABCE	C1	#C44ACi and NR only
24	**BROADMEADOW – SYDNEY METROP.**	2 x AC6 + L2	- -	- -	3641	- -	ABCE	C1	b
25	**BROADMEADOW – SYDNEY METROP.**	L3	1200	2400	3600	4800	ABCE	C2	
26	**BROADMEADOW – SYDNEY METROP.**	L4	1131	2262	3393	4524	ABCE	C2	
27	**BROADMEADOW – SYDNEY METROP.**	L5	1056	2112	3168	4224	ABCE	C2	
28	**BROADMEADOW – SYDNEY METROP.**	L6	926	1852	2778	3704	ABCE	C2	
29	**BROADMEADOW – SYDNEY METROP.**	L7	909	1818	2727	3636	ABCE	C2	
30	**BROADMEADOW – SYDNEY METROP.**	L8	875	1750	2625	3500	ABCE	C2	
31	**BROADMEADOW – SYDNEY METROP.**	L9	750	1500	2250	3000	ABCE	C2	
32	**BROADMEADOW – SYDNEY METROP.**	L10	725	1450	2175	2900	ABCE	C2	
33	**BROADMEADOW – SYDNEY METROP.**	L11	660	1320	1980	2640	ABCE	C2	
34	**BROADMEADOW – SYDNEY METROP.**	L12	615	1230	1845	2460	ABCE	C2	
35	**BROADMEADOW – SYDNEY METROP.**	L13	310	615	925	1230	ABCE	C2	
36	**BROADMEADOW – SYDNEY METROP.**	L4	1131	2262	3393	4524	ABCDE	D1	
37	**BROADMEADOW – SYDNEY METROP.**	L10	725	1450	2175	2900	ABCDE	D1	
38	**BROADMEADOW – SYDNEY METROP.**	L13	410	820	1230	1640	ABCDE	D1	

\# A full list of approved AC6 locomotives (United Group Ltd – C44ACi, Downer EDI Rail – GT46C-ACe, and CRRC Ziyang – SDA1) is summarised under Table 8 Approved locomotives grouped into load categories – locomotive type AC in TS TOC 1.

* Total trailing load limited to 4500t only if consist contains SDA1 type AC locomotives.

b The AC6 locomotive shall be a C44ACi or GT46C-ACe locomotive and the L2 locomotive can be NR or AN class.

UP – sectional running times and full sectional loads

Version April 2021 (5.14)

	#SECTIONAL RUNNING TIMES (INDICATIVE)						FULL SECTIONAL LOADS LOCOMOTIVE CATEGORIES = L													GRADE
	A1	B1	C1	C2	%D1	Loco	AC6	2	3	4	5	6	7	8	9	10	11	12	13	
ISLINGTON JCT to:	↭	↭	↭	↭	↭	↭	↭	↭	↭	↭	↭	↭	↭	↭	↭	↭	↭	↭	↭	↭
WOODVILLE JCT	02:06	02:00	02:00	02:06	3	01:18	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	Level
BROADMEADOW	01:18	01:18	01:18	01:18	4	00:30	5057	4426	4090	3869	3645	3223	3132	3060	2641	2542	2344	2188	1527	1:185
BROADMEADOW YD	01:48	01:54	01:54	02:00	- -	01:00	5057	4426	4090	3869	3645	3223	3132	3060	2641	2542	2344	2188	1527	1:185
ADAMSTOWN	00:30	00:36	00:36	00:36	3	00:24	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	Level
SULPHIDE JCT	07:06	07:48	07:48	08:24	11	07:06	2477	2161	1992	1882	1766	1557	1519	1473	1268	1224	1122	1047	731	1:70
TERALBA COLL JCT	02:24	02:24	02:24	02:30	- -	02:54	4407	3855	3562	3369	3171	2803	2726	2660	2295	2210	2036	1900	1326	1:150
NEWSTAN COLL JCT	06:36	06:54	06:54	07:00	- -	07:00	2477	2161	1992	1882	1766	1557	1519	1473	1268	1224	1122	1047	731	1:69
FASSIFERN	00:30	00:30	00:30	00:30	13	00:30	2357	2080	1894	1789	1678	1479	1444	1399	1204	1163	1065	994	693	1:66
AWABA	04:06	04:12	04:24	04:18	6	03:48	2357	2080	1894	1789	1678	1479	1444	1399	1204	1163	1065	994	693	1:66
ERARING COLL JCT	04:30	05:00	05:00	05:24	- -	03:54	2477	2161	1992	1882	1766	1557	1519	1473	1268	1224	1122	1047	731	1:72
MORISSET	07:54	08:18	08:36	08:54	20	07:48	2477	2161	1992	1882	1766	1557	1519	1473	1268	1224	1122	1047	731	1:71
VALES PT JCT	03:06	03:12	03:24	03:30	- -	02:30	2623	2289	2111	1995	1872	1651	1610	1563	1346	1299	1191	1112	776	1:74
WYEE	03:18	03:30	03:54	03:54	10	03:06	2623	2289	2111	1995	1872	1650	1610	1563	1345	1300	1191	1110	775	1:73
WYONG	08:42	09:30	11:36	11:30	16	09:18	2477	2161	1992	1882	1766	1557	1519	1473	1268	1224	1122	1047	731	1:72
GOSFORD	14:42	15:30	16:18	16:12	20	13:18	2623	2289	2111	1995	1872	1651	1610	1563	1346	1299	1191	1112	776	1:75
WOY WOY	07:24	07:36	07:42	07:42	9	07:06	3039	2654	2449	2315	2175	1920	1870	1818	1567	1511	1388	1295	904	1:90
HAWKESBURY RIVER	13:54	14:24	14:12	14:18	18	13:30	2171	1892	1743	1646	1543	1359	1328	1285	1105	1068	977	912	636	1:60
BORONIA X/OVER	08:48	10:30	10:30	13:18	21	05:18	1500	1230	1200	1131	1056	926	909	875	750	725	660	615	410	1:40
COWAN	07:00	08:24	08:24	11:06	9	03:54	1676	1458	1341	1265	1183	1040	1018	980	842	815	743	693	483	1:45
BEROWRA	05:00	05:48	05:48	07:00	9	03:54	2477	2161	1992	1882	1766	1557	1519	1473	1268	1224	1122	1047	731	1:72
HORNSBY	10:06	10:18	10:18	10:12	11	10:24	2477	2161	1992	1882	1766	1557	1519	1473	1268	1224	1122	1047	731	1:68
THORNLEIGH	04:06	04:12	04:12	04:06	5	04:00	2477	2161	1992	1882	1766	1557	1519	1473	1268	1224	1122	1047	731	1:72
EPPING	06:36	06:36	06:36	06:42	6	08:24	2477	2161	1992	1882	1766	1557	1519	1473	1268	1224	1122	1047	731	1:72
EASTWOOD	02:00	02:06	02:06	02:12	- -	02:42	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	Level
WEST RYDE	02:12	02:12	02:12	02:12	5	03:06	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
RHODES	02:42	02:42	02:42	02:42	3	03:06	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
CONCORD WEST	01:54	02:00	02:00	02:00	3	01:48	4102	3587	3314	3134	2949	2607	2535	2472	2133	2055	1892	1766	1232	1:132
NTH STRATHFIELD JCT	02:00	02:00	02:00	02:00	3	02:12	4102	3587	3314	3134	2949	2607	2535	2472	2133	2055	1892	1766	1232	1:132
FLEM MKTS 625 Pts	03:18	03:18	03:18	03:18	5	03:24	2766	2414	2227	2104	1976	1743	1699	1650	1422	1372	1259	1175	820	1:80
FLEM GDS MID JCT	01:12	01:12	01:12	01:12	5	01:06	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
FLEM GDS SOUTH JCT	01:24	01:24	01:24	01:24	1	01:24	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
MFN FLEMINGTON	01:30	01:30	01:30	01:30	8	01:06	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100

\# For other Sydney Metropolitan area running times, refer to diagram in the '**Sydney Metropolitan Division Pages'** *Sydney Metropolitan Area – freight and locomotive running times* (page 74).

% D schedules do not form part of the Standard Working Timetable. It is used for special train path planning.

Location of speed signs

Version August 2021

Hornsby – Hawkesbury River

KILOM-ETRAGE	DOWN			UP		
	GENERAL	MEDIUM	HIGH	GENERAL	MEDIUM	HIGH
	For previous speed signs refer to					
	SYDNEY METROPOLITAN section					
33.864	HORNSBY					
33.950	80	80	80	..	..	..
33.950	X60	..	X65	*520 Points*		
33.963	*40*	..	..	*Down Sign on Up Shore*		
33.974	X30	..	..	*526A Pts on Down Shore*		
33.980	*X35*	..	..	*521A Pts Down Sign on Up Main*		
34.008	X35	..	..	*523A Pts on Down Shore*		
34.027	*526B Pts on Up Shore*			*X30*	..	..
34.034	*X15*	..	..	*527A Pts Down sign on Up Shore*		
34.041	*521B Pts Up Sign on Down Main*			*X35*	..	..
34.043	X35	..	..	*529A Points*		
34.056	*X35*	..	..	*528A Pts Down sign on Up Shore*		
34.067	*523B Pts*			X35	..	..
34.100	*535Pts Down Sign on Up Sidings*			*X15*	..	..
34.100	*Maximum Speed Up Yard*			15	..	..
34.100	*Max Speed app Buffers Up Yard*			8	..	..
34.108	*529B Pts*			X35	..	..
34.109	*X40*	..	..	*530A Pts Down Sign on Up Main*		
34.110	X45	..	..	*540A Points*		
34.120	*Up Sign on Down Main*			*70*	*70*	*70*
34.133	*528B Pts on No.1 Up Siding*			*X35*	..	..
34.155	*60*	*80*	*80*	*Down Sign on Up Main*		
34.156	X35	..	..	*541A Pts*		
34.188	*Outward Car Shed Road*			X35	*531B Catch Pts*	
34.218	*No.1 Up Siding*			40	..	..
34.218	25	..	..	*No.1 Up Siding*		
34.230	*540B Pts Up Sign on Turnback 1*			*X30*	..	..
34.230	530B Pts on Up Shore			*X40*	..	..
34.238	*X35*	..	..	*533 Pts Down Sign on Up Shore*		
34.244	*543BPts Up Sign on Down Relief*			*X60*	..	..
34.245	*541B Up Sign on Down Main*			*X45*	..	..
34.291	*533Pts Inwards Car Shed Road*			*X35*	..	..
34.360	X45	..	..	*552A Points*		
34.365	*551BPts Up Sign on Down Relief*			*X25*	..	..
34.375	25	..	..	*Inward Car Shed Road*		
34.378	60	60	60	*Down Relief*		
34.379	*Outwards Car Shed Road*			X35	*534B Pts*	
34.379	*Outwards Car Shed Road*			35	..	..
34.455	*552B Points*			X40	..	..
34.500	X60	..	X70	*560 Pts Down Relief*		
34.510	*Up Sign on Down Relief*			*60*	*60*	*60*
34.510	*Up Sign on Turnback 1*			30	30	30
34.586	*Up Shore*			40	..	..
34.586	*X40*	..	..	*564A Catch Pts on Up Shore*		
34.590	90	90	100	..	..	..
34.595	X60	..	..	*569A Pts Down Relief*		
34.605	*560 Pts Up Sign on Down Relief*			*X60*	..	..
34.665	*564B Pts*			X40	..	..
34.675	*Up Sign on Down Relief*			*60*	*60*	*60*
34.710	*Up Sign on Down Relief*			*15*	*15*	*15*
34.735	*569B Pts Up Sign on Down Main*			*X30*	..	..
34.765	13	..	..	*Inwards Car Shed Road*		
34.765	*Outwards Car Shed Road*			25	..	..
34.816	*571B Points*			X25	..	..
34.855	*Outwards Car Shed Road*			13	..	..
34.926	..	..	..	60	80	80
34.950	75	75	75	*Down Relief*		
35.000	115	115	115	..	..	..
35.010	*X55*	..	*X65*	*573A Pts Down Sign Up Main*		
35.260	*X75*	..	..	*574B Pts Down Relief*		
35.260	*Up Sign on Down Relief*			*25*	*25*	*25*
35.694	ASQUITH					
36.500	..	..	..	70	100	100
37.444	85	85	90	70	115	115
37.675	MT COLAH					
37.880	..	..	..	95	95	95
37.932	100	100	105	..	..	..
40.178	75	75	80	95	100	100
40.509	..	..	..	80	80	80
40.667	MT KURING-GAI					
41.054	70	70	75	..	..	..
42.030	85	90	90	..	..	..
42.065	..	..	..	70	70	75
43.633	..	..	..	85	90	90
44.030	..	..	..	60	90	90
44.390	X50	..	X50	51 Points		
44.576	..	..	..	85	90	90
44.661	BEROWRA					
44.710	X50		..	*On Down Loop*		
44.909	90	115	115	..	..	..
45.566	..	..	..	85	85	85
46.995	*On Up Loop*			X50	..	..
47.041	..	..	..	85	100	100
47.155	80	80	85	..	..	..
47.191	*On Up Loop*			50	..	..
47.423	60	60	65	..	..	..
47.526	..	..	..	80	80	80
48.555	X25	..	X35	..	..	..
48.557	*On Up Loop*			35	..	..
48.660				X35	..	..
48.670	60	80	85	..	..	..
48.711	..	..	..	60	60	65
48.814	COWAN					
49.956	..	..	..	60	80	80
49.958	55	60	60	..	..	..
51.375	X50	..	X50	..	..	..
51.409	..	..	..	X50	..	X50
51.409	BORONIA					
51.739	..	..	..	60	60	60
52.479	55	70	75	..	..	..
53.250	50	60	60	..	..	..
53.742	..	..	..	60	65	65
53.745	50	55	55	..	..	..
54.859	55	55	60	..	..	..
55.840	60	60	65	..	..	..
55.841	..	..	..	55	55	55
56.499	65	65	65	..	..	..
56.590	X50	..	X50	..	..	..
56.780	..	..	..	X50	..	X50
57.176	..	..	..	55	60	65
57.397	HAWKESBURY RIVER					
57.527	..	..	..	55	55	60

Bi-directional speed signs Cowan – Hawkesbury River

KILOM-ETRAGE	DOWN SIGNS ON UP MAIN			UP SIGNS ON DOWN MAIN		
	GENERAL	MEDIUM	HIGH	GENERAL	MEDIUM	HIGH
48.814	COWAN					
48.890	..	..	..	*X25*	..	*X35*
48.960	*60*	*80*	*85*	..	..	..
49.958	*55*	*60*	*60*	*60*	*75*	*80*
51.230	*X50*	..	*X50*	..	..	..
51.409	BORONIA					

KILOM-ETRAGE	DOWN SIGNS ON UP MAIN			UP SIGNS ON DOWN MAIN		
51.510	..	..	..	X50	..	X50
51.751	..	..		60	60	60
52.513	55	70	75	..	..	..
53.250	50	60	60	..	..	..
53.742	..	..	..	60	65	65
53.745	50	55	55	..	..	..
54.859	55	55	60	..	..	..
56.499	..	..	..	55	55	55
56.700	X50		X50	..	..	..
57.397	**HAWKESBURY RIVER**					

Hawkesbury River – Gosford

KILOM-ETRAGE	DOWN			UP		
	GENERAL	MEDIUM	HIGH	GENERAL	MEDIUM	HIGH
57.555	80	80	85	..	..	..
58.127	80	100	100	..	..	..
58.130	..	..	..	75	75	85
60.897	80	95	100	..	..	..
60.927	..	..	..	80	100	100
61.625	70	70	75	80	95	100
62.321	65	65	70	..	..	..
63.358	..	..	..	70	70	70
65.146	**WONDABYNE**					
65.290	60	60	65	..	..	..
65.611	60	75	80	..	..	..
65.615	..	..	..	65	65	70
66.586	..	..	..	65	75	80
66.658	60	60	65	..	..	..
66.894	80	115	115	..	..	..
66.995	..	..	..	60	60	65
69.239	80	105	110	80	115	115
69.488	80	115	125	..	..	..
69.489	..	..	..	80	105	110
72.253	..	..	..	80	115	125
72.378	75	75	85	..	..	..
72.617	**WOY WOY**					
72.949	..	..	..	70	80	90
73.193	85	85	85	..	..	..
74.650	..	..	..	80	90	100
74.713	90	90	100	..	..	..
74.819	**KOOLEWONG**					
75.359	70	70	75	..	..	..
75.905	..	..	..	70	70	75
75.907	85	85	95	..	..	..
76.906	**TASCOTT**					
77.230	85	90	95	85	85	90
78.050	**POINT CLARE**					
78.207	85	115	120	85	90	95
80.077	..	..	..	85	115	120
80.078	60	60	60	..	..	..
80.467	X35	..	..	*101A Pts*		
80.485	..	..	..	85	90	95
80.633	*Up Sign on Down Main*			X35	*106B Pts*	
80.643	X35	..	..	*108A Pts*		
80.720	*Down South Siding*			25	..	..
80.763	*Up Sign on Down Refuge*			X35	*108B Pts*	
80.791	..	..	..	60	60	60
80.908	**GOSFORD**					

Gosford – Newcastle Interchange

KILOM-ETRAGE	DOWN			UP		
	GENERAL	MEDIUM	HIGH	GENERAL	MEDIUM	HIGH
80.908	**GOSFORD**					
81.025	X35	*109A Pts*		*Down Sign on Up Main*		

KILOM-ETRAGE	DOWN			UP		
81.040	35	35	35	*Down Refuge*		
81.045	50	40	40	..	..	..
81.078	*Up Sign on Down Main*			X35	*109B Pts*	
81.111	X35	..	..	*111A Pts*		
81.172	*Up Sign on Down Refuge*			X35	*111B Pts*	
81.188	X35	..	..	*112A Pts Down Refuge*		
81.249	*Up Sign on Down Main*			X35	*112B Pts*	
81.328	*114B Pts*			X35	..	..
81.465	*85B Pts Up Refuge*			X50	..	..
81.640	..	..	..	50	40	40
81.691	X35	..	..	*119A Pts Down Refuge*		
81.800	80	85	90	..	..	..
81.825	75	75	75	*Down Refuge*		
82.000	*Up Refuge*			60	60	60
83.407	X75	..	..	*123A Pts Down Refuge*		
83.440	*Up Refuge*			75	75	75
83.620	*124B Pts*			X75	..	..
83.974	75	75	80	80	85	90
84.597	**NARARA**					
84.754	..	..	..	75	75	80
84.820	75	90	100	..	..	..
85.845	..	..	..	75	90	100
86.111	75	75	80	..	..	..
86.193	**NIAGARA PARK**					
86.800	100	100	105	..	..	..
86.802	..	..	..	75	75	80
87.729	**LISAROW**					
87.983	100	115	125	100	100	105
90.004	..	..	..	110	115	125
90.031	110	110	120	..	..	..
90.607	**OURIMBAH**					
92.231	..	..	..	110	110	120
92.231	115	115	145	..	..	..
93.329	X70	*110A Pts*		..	..	..
93.360	..	..	..	115	115	145
93.525	X75	*111B Pts*		*Up Sign on Down Main*		
95.334	115	115	135	115	115	145
97.104	110	110	115	..	..	..
97.143	..	..	..	115	115	135
97.676	..	..	..	110	110	115
98.540	**TUGGERAH**					
99.088	90	90	100	..	..	..
99.400	100	100	105	..	..	..
100.089	..	..	..	115	115	150
100.641	..	..	..	115	115	135
101.082	**WYONG**					
101.291	*60*	*60*	*60*	*Down Sign on Up Main*		
101.291	115	115	115	90	90	95
101.419	*Up Sign on Down Main*			*45*	*60*	*60*
102.491	X60	*107 Points*		*Down Sign on Up Main*		
102.558	*Up Sign on Down Main*			*60*	*60*	*60*
102.760	*108 Points*			X60	..	..
103.084	..	..	..	95	95	105
103.687	115	115	160	..	..	..
105.896	**WARNERVALE**					
106.488	110	110	115	..	..	..
111.803	..	..	..	110	115	115
113.009	105	105	115	110	115	135
114.532	115	115	140	..	..	..
114.534	..	..	..	105	105	115
114.864	**WYEE**					
115.115	..	..	..	115	115	130
116.801	115	115	130	115	115	140
117.436	110	110	120	115	115	130
118.106	105	105	115	110	110	120
119.545	85	85	90	105	105	115
120.265	..	..	..	80	80	85
120.502	115	115	120	..	..	..
123.146	110	110	120	..	..	..

KILOM-ETRAGE	DOWN			UP		
123.189	..	..	..	115	115	125
123.334	**MORISSET**					
124.478	70	70	75	..	..	..
124.480	..	..	..	110	110	115
125.255	80	80	85	..	..	..
125.303	..	..	..	75	75	80
125.680	..	..	..	80	80	85
125.680	95	95	105	..	..	..
126.137	110	115	120	..	..	..
126.139	..	..	..	95	95	105
127.232	**DORA CREEK**					
127.931	110	110	115	..	..	..
127.998	..	..	..	105	115	115
128.364	..	..	..	105	110	115
129.519	85	85	95	..	..	..
129.521	..	..	..	105	105	115
130.447	85	85	90	..	..	..
131.217	70	70	75	..	..	..
131.219	..	..	..	85	90	95
131.638	70	75	80	..	..	..
133.039	70	70	75	70	75	80
134.080	..	..	..	70	70	75
134.838	75	75	80	..	..	..
134.840	..	..	..	65	65	70
136.195	..	..	..	70	70	75
137.231	70	70	80	..	..	..
137.305	**AWABA**					
137.778	100	115	130	70	70	80
140.162	..	..	..	115	115	130
140.165	95	95	105	..	..	..
141.102	75	75	80	95	95	100
142.313	**FASSIFERN**					
142.388	..	..	..	75	75	80
142.498	75	100	105	..	..	..
142.510	X25	..	..	*51 Points*		
142.710	10	..	..	*On South Fork*		
142.710	*On South Fork*			25	..	..
143.496	..	..	..	75	100	105
143.496	70	70	75	..	..	..
143.913	70	70	80	..	..	..
144.302	..	..	..	65	75	80
144.819	..	..	..	70	70	75
144.874	75	80	85	..	..	..
146.194	..	..	..	75	80	85
146.392	**BOORAGUL**					
146.869	75	75	80	..	..	..
147.540	..	..	..	75	75	80
147.565	**TERALBA**					
147.770	75	115	130	..	…	..
149.544	..	..	..	75	115	130
149.544	75	100	105	..	..	..
150.361	75	110	115	..	..	..
150.364	..	..	..	75	95	105
150.626	**COCKLE CREEK**					
152.264	65	110	115	..	..	..
153.451	**SULPHIDE JUNCTION**					
153.546	75	75	85	75	110	115
153.908	..	..	..	75	80	85
154.845	65	65	70	..	..	..
154.897	..	..	..	75	75	80
155.083	**CARDIFF**					
155.512	70	70	75	..	..	..
156.399	85	85	95	..	..	..
156.400	..	..	..	70	70	75
158.339	..	..	..	85	85	90
158.498	60	85	90	..	..	..
158.922	**KOTARA**					
159.045	60	90	90	..	..	..
160.144	60	90	90	..	..	..

KILOM-ETRAGE	DOWN			UP		
160.536	..	..	..	90	100	110
161.120	**ADAMSTOWN**					
162.033	..	..	..	90	90	100
162.804	60	60	60	..	..	..
162.935	**BROADMEADOW**					
163.670	X30	..	X30	..	..	..
163.685	**WOODVILLE JUNCTION**					
163.690	**WOODVILLE JUNCTION SIGNAL BOX**					
163.910	40	..	45	*On Down Islington Loop*		
163.910	*On Up Islington Loop*			X30	..	X30
163.913	..	..	..	80	80	80
Note: General only speed signs through to Newcastle Interchange						
163.938	40	..	..	..	..	..
164.310	X25	..	..	*475 Points*		
164.330	..	..	..	40	..	..
164.395	25	..	..	..	..	..
164.410	*476 Points*			X25	..	..
164.488	60	..	..	..	..	..
164.555	..	..	..	75	..	..
164.633	**HAMILTON**					
165.125	..	..	..	60	..	..
165.222	40 / X30	..	..	*Transit Road / 485A Pts*		
165.251	*Up Sign on Down Branch*			X60	*484B Pts*	
165.296	*Up Sign on Down Branch*			X30	*485B Pts*	
165.303	X40	..	..	*486A Pts*		
165.386	*Up Sign on Transit Road*			X40	*486B Pts*	
165.395	*Up Sign on Down Branch*			X60	*487B Pts*	
165.395	25	..	..	*Transit Road*		
165.395	25	..	..	..	..	..
165.395	25	..	..	*Down Sign on Up Branch*		
165.465	*488B Pts*			X40	..	..
165.745	*Platform 3 Road*			40	..	..
165.746	*Platform 1 and 2 Road*			60	..	..
165.643	**NEWCASTLE INTERCHANGE**					

Station data

Version April 2019

Station	Kilo – metrage	Signal Box Status	Hours of Signal Box	Facilities
Hornsby	33.864	A	Controlled from Homebush	P
Asquith	35.694			P
Mt Colah	37.675			P
Mt Kuring-gai	40.667			P
Berowra	44.661	C	Controlled from Homebush	P
Cowan	48.814	C	Controlled from Homebush	P
Boronia	51.409	C	Controlled from Homebush	L
Hawkesbury River	57.397	C	Controlled from Homebush	P
Wondabyne	65.146			P
Woy Woy	72.617			P
Koolewong	74.819			P
Tascott	76.906			P
Point Clare	78.050			P
Gosford	80.908	A	Always	P, TT, WC
Narara	84.597			P
Niagara Park	86.193			P
Lisarow	87.729			P
Ourimbah	90.607			P
Tuggerah	98.540			P
Wyong	101.082	A	Always	P
Warnervale	105.896			P
Wyee	114.864			P
Vales Point Coal	119.230	C	Controlled from Morisset	L
Morisset	123.334	A	Always	P
Eraring Coal	132.590	C	Controlled from Broadmeadow Signal Control Centre	L
Dora Creek	127.232			P
Awaba	137.305	C	Controlled from Broadmeadow Signal Control Centre	LP, P
Fassifern	142.313		Attended as required for Newstan Colliery	P
Booragul	146.392			P
Teralba	147.565			P
Teralba Colliery				L
Cockle Creek	150.626			P
Sulphide Junction	153.451	C	Controlled from Broadmeadow Signal Control Centre	
Cardiff	155.083			P
Kotara	158.922			P
Adamstown	161.120	C	Controlled from Broadmeadow Signal Control Centre	P
Broadmeadow	162.935	C	Controlled from Broadmeadow Signal Control Centre	P
Woodville Junction	163.690	A	Always	
Hamilton	164.633	A	Always	P
Newcastle Interchange	165.643	A	Always	P

Advisory speed signs

Special advisory speed signs have been positioned approaching signals at the locations shown below. Drivers of trains (except XPT's / Xplorer, Endeavour, Hunter trains and EMU's) are required to regulate the speed of their train at such locations to ensure that before reaching the signal indicated the speed is not in excess of that figure shown on the special advisory sign. If at any point approaching the signal it is seen to be exhibiting a full clear indication, normal track speed for the train concerned may be resumed.

Location	Signal number	Speed shown on sign
141.540 km	Fassifern No 48 Down Home, Main (88.1)	60
142.145 km	Fassifern Down Second Home, Main (88.5)	60

Tonnage signals

Certain signals listed herein are treated as **Tonnage Signals**, that is to say, in order to avoid the risk of trains over a certain tonnage being brought to a stand at signals where it would be difficult for them to restart, these tonnage signals shall not be passed by trains conveying loads in excess of 75% of the prescribed load (i.e. 75% of Full Sectional Load) unless the Tonnage signal is in the clear position (or by telephone instructions in the case of failure).

The following signals are to be treated as a Tonnage signal, in accordance with Sydney Trains Network Rule *NSG 608 Passing signal at STOP*.

Kilometrage	Signal number	Section located
Tonnage signals	**Refer to Sydney Metropolitan Section *Tonnage signals* (page 76) for Tonnage Signals between Sydney and Hornsby**	
57.290	# 146	Hawkesbury River
57.295	# 148	Hawkesbury River
57.300	# 150	Hawkesbury River
57.420	# 148 Repeater	Hawkesbury River
65.804	40.9	Wondabyne – Woy Woy
126.900	78.8	Dora Creek – Morisset
128.420	79.9	Dora Creek – Awaba

The signals at Hawkesbury River are fitted with a notice plate that reads as follows:

TONNAGE SIGNAL
TRAINS OVER
PRESCRIBED
LOAD TO WAIT
UNTIL SIGNAL IS
AT FULL CLEAR
OR 'T' INDICATOR
IS ILLUMINATED

Transfer of Heavy Coal locomotives Woodville Junction – Enfield/Chullora and return for wheel lathe attention or maintenance

Version August 2021

Heavy Coal locomotives include the following locomotives:

- 90 Class
- TT and TT100 Class (at up to 139t)
- C44aci (92, 93, 6000, 6020, ACC, CEY, CF, FIE, GWU, MRL, PHC, QL, and XRN at up to 139t)

These Heavy Coal locomotives may be transferred from Woodville Junction to Flemington South Junction (for Enfield or Chullora) and return for wheel lathe attention or maintenance as a light locomotive movement in each direction subject to the following conditions:

1. Single or multiple 90 class locomotives are permitted, or a 90 class locomotive can be transferred in multiple with any other Pacific National locomotive.
2. Single or multiple TT, TT100, or C44aci locomotives are permitted, and shall be reduced to 134 tonnes or less when traversing between Vales Point and Flemington South Junction.
3. The axle loads are to be decreased by ensuring the locomotives have a reduced fuel load (do not fill fuel tank prior to transfer).
4. The 90 class locomotives shall reduce its speed to 20 km/h when traversing the following bridges:
    - Main North: 12.628 km (Parramatta Rd)
    - Bankstown Line: 19.202 km (Marion St)

    In addition, the speed of 90 class locomotives shall be reduced to 50 km/h when traversing the following bridge:
    - Main North: 160.300 km (Kotara – Northcott Drive)
    - Main North: 127.025 km (Dora Creek – Dora Ck)
5. The maximum track speed shall be as detailed in the table below:

Maximum track speeds (90 Class)	
Location	**Speed**
Between Woodville Junction – Vales Point Junction	60 km/h
Between Flemington South Junction – Vales Point Junction	50 km/h

Note – TT, TT100, and C44aci locomotives do not require additional speed restrictions as they are reduced to 134 tonnes or less and can operate at normal track speeds.

6. Sector Civil Engineers to be advised at least 48 hours in advance.

7. Transfer of these locomotives from Woodville Junction to Flemington South Junction (for Enfield/Chullora) is to be done under block working conditions as per *NSY 512 Manual block working*.

   Transfer of these locomotives from Flemington South Junction (from Enfield/Chullora) to Woodville Junction shall be blocked worked where specified in the *General Instruction Pages of the Train Operating Conditions Manual, Locomotive Operations*.

Conditions for the operation of self-propelled diesel trains

Version December 2018

The following operating conditions are for diesel self-propelled trains (XPT) between Hornsby and Woodville Junction / Newcastle Interchange.

XPT	Conditions of Operation – Down Direction
√	All power cars operating
- -	All engines operating
√	Maximum 7 trailer cars with 2 power cars or maximum 4 trailer cars with 1 power car powering and 1 power car disabled
√	All compressors operating
√	Emergency coupler available
√	No brake cut outs permitted
√	Electro-pneumatic (EP) brake, automatic brake, hand and all spring parking brakes fully operational

XPT	Conditions of Operation – UP Direction
√	All power cars operating
- -	All engines operating
√	Maximum 7 trailer cars with 2 power cars or maximum 4 trailer cars with 1 power car powering and 1 power car disabled
√	All compressors operating
√	Emergency coupler available
√	No brake cut outs permitted
√	Electro-pneumatic (EP) brake, automatic brake, hand and all spring parking brakes fully operational

Section 14

Western Division pages

14. Western Division pages

Version August 2021

Maximum speed of locomotives and rolling stock

	Penrith – Lithgow DOWN MAIN	Lithgow – Valley Heights UP MAIN (a)	Valley Heights – Penrith UP MAIN
Class of Line	1	1	1
Line Map Reference	A	B	C
LOCOMOTIVES			
Class	**Max Speed km/h**		
90, TT(139t), TT100 (139t), C44aci(139t)(d)	N/A	N/A	N/A
31, L, LQ, LZ	100	100	100
1100, 92, 93, 6000, 6020, ACC, C, CEY, CF, CM, CSR, FIE, GWA, GWU, LDP10, MRL, PHC, QBX, QL, RL, SCT, SSR, TT(134t), TT100 (134t), WH, XRN	115	115	115
82, CLP, GL NR	115	115	115
14, 81, ALF, AN, BL, CLF, G, VL	115	115	115
42, 80, 80s, B, DL	115	115	115
18	90	90	90
442, 442s, 700, GM(12), S, X	115	115	115
32	100	100	100
1200,22,421,422,44,45,45s,600,DC,EL,FL,GM(1),HL	115	115	115
43, 44s, 930	115	115	115
423	80	80	80
D, K, T	100	100	100
47, 48, 48200, 48s, 49, 830, 900, GPU, MM, PL	100	100	100
73 (c)	70	70	70
46, 86 Electric	100(b)	100(b)	100(b)
32(P), 59 Steam	80	80	80
Multiple locomotive working (powering locomotives horsepower limit per locomotive group)	U (16000)	U (16000)	U (16000)
FREIGHT			
Class A	115	115	115
Class B	100	100	100
Class C	80	80	80
Class D	65	65	65
Class E	80	80	80
Class F	65	65	65
Class G	N/A	N/A	N/A
PASSENGER			
XPT	160	160	160
XPLORER	145	145	145
DIESEL RAILCARS	115	115	115
LOCO HAULED	115	115	115

NOTES

U = Unlimited number of locomotives (subject to horsepower limit per locomotive group).

(a) See instructions contained in *General Instructions* for operation of trains and light locomotives over the section Katoomba to Valley Heights.

(b) Applies to SINGLE and distributed locomotives (separated by at least 70 metres of train). No OHW restrictions apply. Both pantographs may be raised.

(c) Only locomotives fitted with vigilance control system approved to operate outside shunting yards.

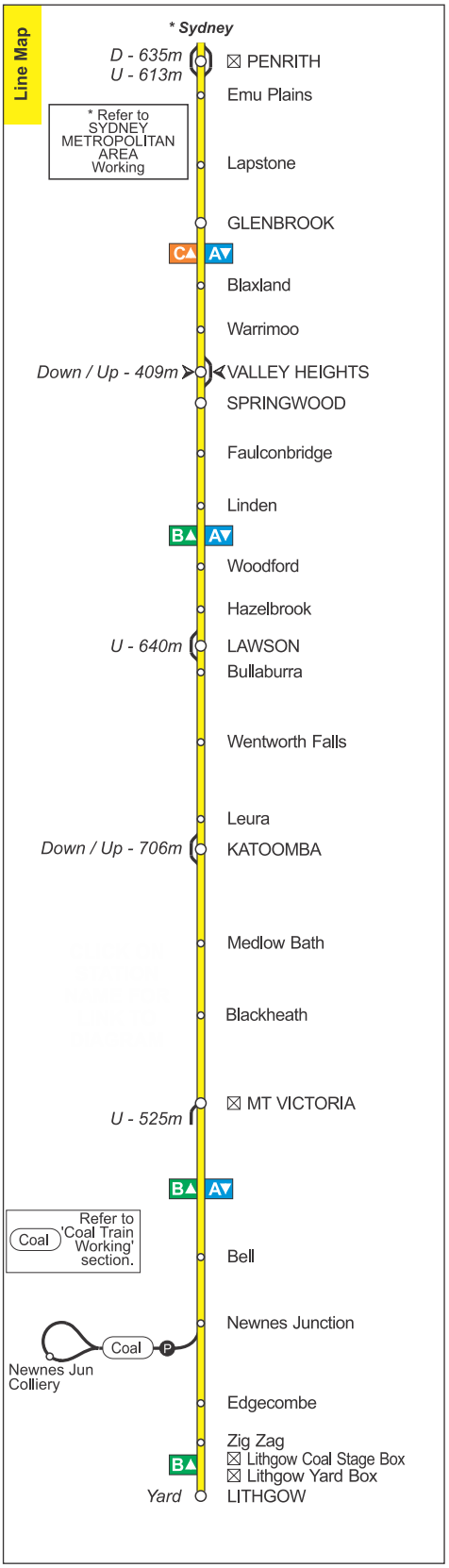
(d) C44aci(139t) locomotives provisioned between 134t and 139t include 92, 93, 6000, 6020, ACC, CEY, CF, FIE, GWU, MRL, XRN, PHC.

SAFEWORKING SYSTEMS

Penrith – Edgecombe	#Rail Vehicle Detection (Axle Counters at Mt Victoria)
Edgecombe – Zig Zag	Rail Vehicle Detection (Bi-directional)
Zig Zag – Lithgow Coal Stage Signal Box	Rail Vehicle Detection
Lithgow Coal Stage Signal Box – Lithgow Yard Signal Box	Rail Vehicle Detection

#Valley Heights to Springwood – Two way running Down Main

Line Map



General - Sectional running times and full sectional loads

Version April 2020

The locomotive-load-run times configurations (DOWN loads and UP loads) published in this section are for existing approved paths in the Standard Working Timetable (SWTT). For configurations that are not listed, the train shall run at the discretion of the train controller, based on the following:

- The trailing load does not exceed the sum of individual locomotive full sectional loads, accounting for load reductions specified in (TS TOC.1 Section 2.11 and 2.12)
- There is capacity on the network (based on the live status and the SWTT/DWTT) for the train controller to allocate additional times for the train if longer journey or sectional running times, or both are foreseen.
- The operator operates to the assigned schedule or under the direction of the train controller to ensure the train's arrival at critical junctions or destinations does not cause train control conflicts to the network.

The sectional running times published are based on RailNet Running Time Profiles (simulations). Train consists (locomotive and trailing loads) used in the simulations are based on the length limits in the train operating length diagram in TS TOC 1 (Section 1.11) with no speed restrictions applied.

Any planned and timetabled sectional running times used in ad hoc paths, Daily Working Timetable, and Standard Working Timetable have additional time added to the published running times (for example recovery time), which should be accounted for by the train controller / planner / programmer as appropriate.

DOWN loads

Version December 2020

			LOAD – TONNES				TRAIN DATA		
	SECTIONS	LOCOMOTIVE CLASS = L	SINGLE	DOUBLE	TRIPLE	QUAD	VEHICLE CLASS	SECT RUN TIMES	NOTES
1	SYDNEY METROP – LITHGOW	L2	900	1800	2700	3600	ABC	Lo1	$
2	SYDNEY METROP – LITHGOW	L2	900	1800	2700	3600	A	A1	
3	SYDNEY METROP – LITHGOW	L3/L4	550	1100	1650	2200	A	A1	
4	SYDNEY METROP – LITHGOW	AC6	900	1800	2700	--	A	A1	
5	SYDNEY METROP – LITHGOW	AC6 + L2	--	1950	--	--	A	A1	# C44ACi and NR Only
6	SYDNEY METROP – LITHGOW	AC6 + L2	--	1850	--	--	A	A1	b
7	SYDNEY METROP – LITHGOW	AC6 + 2 x L2	--	--	2850	--	A	A1	# C44ACi and NR Only
8	SYDNEY METROP – LITHGOW	AC6 + 2 x L2	--	--	2610	--	A	A1	b
9	SYDNEY METROP – LITHGOW	2 x AC6 + L2	--	--	3000	--	A	A1	# C44ACi and NR Only
10	SYDNEY METROP – LITHGOW	2 x AC6 + L2	--	--	2890	--	A	A1	b
11	SYDNEY METROP – LITHGOW	AC6	--	1130	--	--	ABC	C1	
12	SYDNEY METROP – LITHGOW	L3/L4	450	900	1350	1800	ABCE	C1	
13	SYDNEY METROP – LITHGOW	L4 + L11	--	691	--	--	ABCE	C1	G + 442 Only
14	SYDNEY METROP – LITHGOW	L4 + 2 x L11	--	--	932	--	ABCE	C1	G + 442 Only
15	SYDNEY METROP – LITHGOW	3 x L11	--	--	723	--	ABCE	C1	G + 442 Only
16	SYDNEY METROP – LITHGOW	2 x L11 + L12	--	--	723	--	ABCE	C1	G + 442 Only
17	SYDNEY METROP – LITHGOW	4 X L11	--	--	--	964	ABCE	C1	G + 442 only
18	SYDNEY METROP – LITHGOW	3 x L11 + L12	--	--	--	964	ABCE	C1	G + 442 only
19	SYDNEY METROP – LITHGOW	L2	900	1800	2700	3600	ABCDE	C2	
20	SYDNEY METROP – LITHGOW	L3/L4	550	1100	1650	2200	ABCE	C2	
21	SYDNEY METROP – LITHGOW	AC6	900	1800	2700	--	ABCDE	C2	
22	SYDNEY METROP – LITHGOW	AC6 + L2	--	1950	--	--	ABCDE	C2	# C44ACi & NR Only
23	SYDNEY METROP – LITHGOW	AC6 + L2	--	1850	--	--	ABCDE	C2	b
24	SYDNEY METROP – LITHGOW	AC6 + 2 x L2	--	--	2850	--	ABCDE	C2	# C44ACi & NR Only
25	SYDNEY METROP – LITHGOW	AC6 + 2 x L2	--	--	2610	--	ABCDE	C2	b
26	SYDNEY METROP – LITHGOW	2 x AC6 + L2	--	--	3000	--	ABCDE	C2	# C44ACi & NR Only
27	SYDNEY METROP – LITHGOW	2 x AC6 + L2	--	--	2890	--	ABCDE	C2	b
28	SYDNEY METROP – LITHGOW	L13	281	562	843	1124	ABCDE	C4	
29	SYDNEY METROP – LITHGOW	L3/L4	750	1500	2250	3000	ABCDE	D1	
30	SYDNEY METROP – LITHGOW	L5	700	1400	2100	2800	ABCDE	D1	
31	SYDNEY METROP – LITHGOW	L6/L7	599	1198	1497	2396	ABCDE	D1	
32	SYDNEY METROP – LITHGOW	L8	573	1146	1719	2292	ABCDE	D1	
33	SYDNEY METROP – LITHGOW	L9/L10	450	900	1350	1800	ABCDE	D1	
34	SYDNEY METROP – LITHGOW	L11/L12	402	804	1206	1608	ABCDE	D1	
35	SYDNEY METROP – LITHGOW	AC6	1246	2492	3738	--	ABCDE	D1	

$ This schedule is for trains longer than 1280m and up to 1500m, with speed restrictions applied as per TS TOC 1, Section 1.11.

A full listing of approved AC6 locomotives (United Group Ltd – C44ACi, Downer EDI Rail – GT46C-ACe, and CRRC Ziyang – SDA1) is summarised under Table 8 Approved locomotives grouped into load categories – locomotive type AC in TS TOC 1.

b The AC6 locomotive shall be a C44ACi or GT46CACe type AC locomotive and the L2 locomotive shall be NR or AN class.

DOWN – sectional running times and full sectional loads

Version April 2021 (5.14)

	SECTIONAL RUNNING TIMES (INDICATIVE)							FULL SECTIONAL LOADS LOCOMOTIVE CATEGORIES = L													GRADE
	Lo1[$]	A1	C1	C2	C4	%D1	Loco	AC6	2	3	4	5	6	7	8	9	10	11	12	13	
MFN FLEMINGTON to:																					
FLEM GDS STH JCT	01:00	01:06	01:06	01:06	01:06	8	01:24	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
LIDCOMBE	03:12	03:06	03:06	03:06	03:06	3	02:00	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
AUBURN	02:06	02:06	02:06	02:06	02:06	3	02:30	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
CLYDE	02:18	02:12	02:12	02:12	02:12	3	03:00	3542	3096	2858	2702	2541	2245	2185	2128	1835	1768	1627	1518	1059	1:110
GRANVILLE	00:36	00:42	00:42	00:42	00:42	2	00:42	3775	3300	3047	2882	2711	2395	2330	2271	1959	1887	1737	1621	1131	1:120
PARRAMATTA	02:30	02:06	02:06	02:06	02:06	2	01:48	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	Level
WESTMEAD	02:00	01:54	01:42	01:48	02:12	2	01:36	2766	2414	2227	2104	1976	1743	1699	1650	1422	1372	1259	1175	820	1:80
SEVEN HILLS	06:24	05:48	05:36	05:42	06:36	7	06:24	2477	2161	1992	1882	1766	1557	1519	1473	1268	1224	1122	1047	731	1:70
BLACKTOWN	02:42	02:24	02:18	02:18	02:42	3	02:18	2904	2536	2339	2211	2077	1833	1786	1736	1495	1442	1324	1236	862	1:85
ST MARYS	11:24	10:06	09:54	10:00	11:18	12	11:48	2766	2414	2227	2104	1976	1743	1699	1650	1422	1372	1259	1175	820	1:80
PENRITH	08:06	07:06	07:00	06:54	07:30	8	07:42	2623	2289	2111	1995	1872	1651	1610	1563	1346	1299	1191	1112	776	1:75
EMU PLAINS	02:36	02:12	02:06	02:12	02:12	2	02:00	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	Level
GLENBROOK	12:12	11:42	09:54	11:06	17:24	14	08:12	2171	1892	1743	1646	1543	1359	1328	1285	1105	1068	977	912	636	1:60
VALLEY HEIGHTS	14:00	13:54	11:12	13:06	21:48	16	09:18	2171	1892	1743	1646	1543	1359	1328	1285	1105	1068	977	912	636	1:60
SPRINGWOOD	03:54	04:06	03:12	03:42	06:36	5	02:30	1246	900	750	750	700	610	599	573	490	476	431	402	281	1:33
LAWSON	29:12	29:06	23:42	27:54	45:48	36	16:54	1246	900	750	750	700	610	599	573	490	476	431	402	281	1:33
WENTWORTH FLS	11:54	11:48	09:24	11:12	17:42	14	06:24	1246	900	750	750	700	610	599	573	490	476	431	402	281	1:33
KATOOMBA	12:06	12:06	10:12	11:36	18:54	15	07:54	1246	900	750	750	700	610	599	573	490	476	431	402	281	1:33
MT VICTORIA	20:42	18:48	17:54	18:42	19:30	19	18:12	2357	2055	1894	1789	1678	1479	1444	1399	1204	1163	1065	994	693	1:66
NEWNES JCT	16:06	14:48	13:30	14:24	18:06	17	14:12	2623	2289	2111	1995	1872	1651	1610	1563	1346	1299	1191	1112	776	1:75
EDGECOMBE	03:42	03:06	03:00	03:00	03:12	4	03:24	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
ZIG ZAG	06:36	05:36	05:42	05:42	06:00	6	08:06	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
LITHGOW CS BOX	04:18	04:12	03:54	04:12	03:54	5	05:06	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
LITHGOW	02:06	01:48	01:42	01:48	01:48	2	01:36	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
CRN WEST BDRY	00:36	00:30	00:30	00:30	00:36	1	00:24	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG

For other Sydney Metropolitan area running times, refer to diagram in the **'Sydney Metropolitan Division Pages'** *Sydney Metropolitan Area – freight and locomotive running times* (page 74).

$ This schedule is for trains longer than 1280m and up to 1500m, with the speed restrictions applied as per TS TOC 1, Section 1.11.

% D schedules do not form part of the Standard Working Timetable. It is used for special train path planning

UP loads

Version December 2020

			LOAD – TONNES				TRAIN DATA		
	SECTIONS	LOCOMOTIVE CLASS = L	SINGLE	DOUBLE	TRIPLE	QUAD	VEHICLE CLASS	SECT RUN TIMES	NOTES
1	LITHGOW – SYDNEY METROP	L2	850	1700	2550	3400	A	A1	
2	LITHGOW – SYDNEY METROP	L3/L4	550	1100	1650	2200	A	A1	
3	LITHGOW – SYDNEY METROP	AC6	850	1700	2550	- -	A	A1	
4	LITHGOW – SYDNEY METROP	L2	1300	2600	3900	5200	A	A2	
5	LITHGOW – SYDNEY METROP	L3/L4	1000	2000	3000	4000	A	A2	
6	LITHGOW – SYDNEY METROP	AC6	1500	3000	4600*	- -	A	A2	*
7	LITHGOW – SYDNEY METROP	AC6 + L2	- -	2750	- -	- -	A	A2	# NR Only
7a	LITHGOW – SYDNEY METROP	AC6 + L2	- -	2410	- -	- -	A	A2	b
8	LITHGOW – SYDNEY METROP	AC6 + 2 x L2	- -	- -	4050	- -	A	A2	# NR Only
8a	LITHGOW – SYDNEY METROP	AC6 + 2 x L2	- -	- -	3530	- -	A	A2	b
9	LITHGOW – SYDNEY METROP	2 x AC6 + L2	- -	- -	4200	- -	A	A2	# NR Only
9a	LITHGOW – SYDNEY METROP	2 x AC6 + L2	- -	- -	3700	- -	A	A2	b
10	LITHGOW – SYDNEY METROP	AC6^	- -	3200	5000	^	ABCE	Lo2	^
11	LITHGOW – SYDNEY METROP	L2	1300	2600	3900	5200	ABCE	C1	
12	LITHGOW – SYDNEY METROP	L3/L4	1000	2000	3000	4000	ABCE	C1	
13	LITHGOW – SYDNEY METROP	AC6	1500	3000	4600*	- -	ABCE	C1	*
14	LITHGOW – SYDNEY METROP	AC6 + L2	- -	2750	- -	- -	ABCE	C2	# C44ACi & NR Only
15	LITHGOW – SYDNEY METROP	AC6 + L2	- -	2410	- -	- -	ABCE	C2	b
16	LITHGOW – SYDNEY METROP	AC6 + 2 x L2	- -	- -	4050	- -	ABCE	C2	# C44ACi & NR Only
17	LITHGOW – SYDNEY METROP	AC6 + 2 x L2	- -	- -	3530	- -	ABCE	C2	b
18	LITHGOW – SYDNEY METROP	2 x AC6 + L2	- -	- -	4200	- -	ABCE	C2	# C44ACi & NR Only
19	LITHGOW – SYDNEY METROP	2 x AC6 + L2	- -	- -	3700	- -	ABCE	C2	b
20	LITHGOW – SYDNEY METROP	L3/L4	1400	2800	- -	- -	ABCE	C2	~
21	LITHGOW – SYDNEY METROP	L4 + L13	- -	1800	- -	- -	ABCE	C2	~
22	LITHGOW – SYDNEY METROP	L3/L4	1131	2262	3393	4524	ABCE	C2	
23	LITHGOW – SYDNEY METROP	L5	1056	2112	3168	4224	ABCE	C2	
24	LITHGOW – SYDNEY METROP	L6	926	1852	2778	3704	ABCE	C2	
25	LITHGOW – SYDNEY METROP	L7	909	1818	2727	3636	ABCE	C2	
26	LITHGOW – SYDNEY METROP	L8	875	1750	2625	3500	ABCE	C2	
27	LITHGOW – SYDNEY METROP	L9	750	1500	2250	3000	ABCE	C2	
28	LITHGOW – SYDNEY METROP	L10	725	1450	2175	2900	ABCE	C2	
29	LITHGOW – SYDNEY METROP	L11	640	1280	1920	2560	ABCE	C2	
30	LITHGOW – SYDNEY METROP	L12	615	1230	1845	2460	ABCE	C2	
31	LITHGOW – SYDNEY METROP	L13	410	820	1230	1640	ABCE	C3	
32	LITHGOW – SYDNEY METROP	L3/L4	1131	2262	3393	4524	ABCDE	D1	

~ This train shall be given a clear run from Bowenfels to Zig Zag. The train shall not stop at Lithgow.

b The AC6 locomotive shall be a C44ACi or GT46C-ACe type AC locomotive and the L2 locomotive can be NR or AN class.

* Total trailing load limited to 4500t only if any consist contains any SDA1 type AC locomotives.

\# A full listing of approved AC6 locomotives (United Group Ltd – C44ACi, Downer EDI Rail – GT46C-ACe, and CRRC Ziyang – SDA1) is summarised under Table 8 Approved locomotives grouped into load categories – locomotive type AC in TS TOC 1.

^ Operation of the Lo2 schedule is only applicable for FIE locomotives hauling FRAY wagons. The following additional conditions apply:

1. One CEY locomotive may be used to replace any of the FIE locomotives in the train consist. The CEY / FIE locomotives can be marshalled in any combination.
2. All hauling locomotives shall be fitted with an operative dynamic brake.
3. The MR and BP shall be continuous throughout the train.
4. The train length is permitted to exceed 1100 m, up to a maximum of 1280 m between Katoomba and Valley Heights.
5. A quad trailing load of 6131 tonnes is permitted to operate between Bowenfels and Katoomba with a train consist of 3 x FIE class locomotives, hauling FRAY wagons, assisted in the rear by a G class locomotive.
    a. The train shall operate at 10km/h below the speed signs down to 50 km/h, then observe the general speed signs.
    b. The rear assisting locomotive shall provide assistance to at least the 144 km mark and shall be detached from the consist at a location prior to Katoomba (109.9 km).
6. A quad trailing load of 6131 tonnes is permitted to operate under the Lo2 schedule between Katoomba and Sydney Metrop with a train consist of 3 x FIE class locomotives hauling FRAY wagons.

UP – sectional running times and full sectional loads

Version April 2021 (5.14)

	#SECTIONAL RUNNING TIMES (INDICATIVE)								FULL SECTIONAL LOADS LOCOMOTIVE CATEGORIES = L													GRADE
	A1	A2	Lo2	C1	C2	C3	%D1	Loco	AC6	2	3	4	5	6	7	8	9	10	11	12	13	
CRN WEST BDRY to:																						
LITHGOW	00:36	00:42	00:48	00:42	00:42	00:48	1	00:36	4407	3855	3562	3369	3171	2803	2726	2660	2295	2210	2036	1900	1326	1:150
LITHGOW CS BOX	02:00	02:06	02:00	02:00	02:00	02:00	2	01:54	4407	3855	3562	3369	3171	2803	2726	2660	2295	2210	2036	1900	1326	1:150
ZIG ZAG	04:36	06:18	06:48	06:00	09:18	09:12	7	04:12	1500	1300	1200	1131	1056	926	909	875	750	725	660	615	410	1:40
EDGECOMBE	07:18	10:06	12:24	09:36	13:00	13:30	12	05:42	3039	2654	2449	2315	2175	1920	1870	1818	1567	1511	1388	1295	904	1:90
NEWNES JCT	03:06	03:42	04:06	03:36	04:18	04:30	5	03:06	3039	2654	2449	2315	2175	1920	1870	1818	1567	1511	1388	1295	904	1:90
MT VICTORIA	16:00	17:48	20:06*	17:24	19:48	20:48	17	15:48	3039	2654	2449	2315	2175	1920	1870	1818	1567	1511	1388	1295	904	1:90
KATOOMBA	17:54	19:42	22:06*	19:24	20:36	21:48	20	18:06	2766	2414	2227	2104	1976	1743	1699	1650	1422	1372	1259	1175	820	1:80
WENTWORTH FALLS	11:18	10:36	11:54	11:18	11:18	11:30	16	13:18	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
LAWSON	10:24	10:24	11:06	10:24	10:18	10:48	14	13:36	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
SPRINGWOOD	25:06	25:06	25:42	25:06	25:06	25:42	27	33:36	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
VALLEY HEIGHTS	03:42	03:42	03:48	03:42	03:42	03:54	4	03:06	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
GLENBROOK	10:54	11:00	11:36	11:00	10:48	11:00	15	14:06	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
EMU PLAINS	11:24	11:24	12:18	11:24	11:24	11:30	10	13:24	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	Level
PENRITH	02:30	02:36	02:36	02:30	02:30	02:48	4	02:18	5057	4426	4090	3869	3645	3223	3132	3060	2641	2542	2344	2188	1527	1:186
ST MARYS	06:54	07:30	07:42	07:24	08:06	09:12	8	07:12	2357	2055	1894	1789	1678	1479	1444	1399	1204	1163	1065	994	693	1:66
BLACKTOWN	10:12	10:54	11:06	10:54	11:24	12:36	13	11:18	2766	2414	2227	2104	1976	1743	1699	1650	1422	1372	1259	1175	820	1:80
SEVEN HILLS	02:24	02:24	02:30	02:24	02:24	02:30	2	03:00	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
WESTMEAD	06:06	06:18	06:30	06:12	06:24	06:42	7	06:36	3195	2791	2576	2435	2289	2021	1968	1915	1650	1591	1462	1365	952	1:95
PARRAMATTA	02:36	02:36	02:48	02:36	02:36	03:00	3	02:36	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
GRANVILLE	02:30	02:30	02:36	02:30	02:30	02:30	2	01:54	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
CLYDE	00:30	00:30	00:30	00:30	00:30	00:30	2	00:36	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
AUBURN	02:24	02:24	02:36	02:24	02:24	02:24	3	02:12	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
LIDCOMBE	02:06	02:06	02:12	02:06	02:06	02:06	3	02:24	3775	3300	3047	2882	2711	2395	2330	2271	1959	1887	1737	1621	1131	1:120
FLEM GDS STH JCT	01:48	01:48	02:00	01:48	01:48	01:48	3	02:06	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
MFN FLEMINGTON	01:30	01:30	01:30	01:30	01:30	01:30	8	01:06	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100

\# For other Sydney Metropolitan area running times, refer to diagram in the **'Sydney Metropolitan Division Pages'** *Sydney Metropolitan Area – freight and locomotive running times* (page 74).

% D schedules do not form part of the Standard Working Timetable. It is used for special train path planning

* The published time does not include the shunt times and detachment of the rear assisting G class locomotive in the train consist at Mount Victoria

Assisting Lithgow to Zig Zag

December 2013

The assist locomotive can be marshalled either on the front or on the rear of the train depending upon operational requirements and vehicle gross masses in the trailing 1/3 of the train mass as outlined in General Instruction Pages, Section 2 Locomotive Operations, Assisting (banking) locomotives.

When trains are **assisted in the lead** from Lithgow, the assist locomotives are to remain on the train until it arrives at Mt. Victoria. This is to avoid the situation of removing the assist locomotives from the train at Zig Zag whilst a portion of the train is still on the rising 1 in 40 grade.

When trains are **assisted in the rear** from Lithgow, bank locomotive traction motor currents shall not exceed 250 amps on diesel locomotives, until all the bank locomotives are on the Main line and completely clear of the crossovers in Lithgow yard.

Bank Locomotive working between Lithgow Coal Stage and Zig Zag is to be carried out as outlined in Sydney Trains Network Local Appendices *NLA 218 Lithgow*.

Location of speed signs

Version December 2020

KILOM-ETRAGE	DOWN			UP		
	GENERAL	MEDIUM	HIGH	GENERAL	MEDIUM	HIGH
55.086	PENRITH					
55.500	..	..	..	75	75	80
56.794	..	..	..	60	75	80
57.269	..	..	..	60	85	85
57.316	100	100	100	..	..	..
57.439	EMU PLAINS					
58.882	..	..	..	60	85	85
58.883	75	75	80	..	..	..
59.539	70	70	75	60	75	80
60.785	70	75	80	..	..	..
60.965	..	..	..	60	70	75
61.703	..	..	..	40	70	75
61.988	..	..	..	40	60	60
62.046	70	70	75	..	..	..
63.617	LAPSTONE					
65.105	65	65	65	70	70	75
65.563	65	70	75	..	..	..
65.793	..	..	..	65	65	65
66.800	65	65	70	..	..	..
66.926	..	..	..	65	70	75
67.080	GLENBROOK					
67.147	70	70	75	65	65	70
69.144	..	..	..	50	70	75
71.427	70	80	85	..	..	..
71.484	BLAXLAND					
71.484	..	..	..	70	70	75
72.744	65	65	70	..	..	..
72.780	..	..	..	70	80	85
73.085	65	80	85	65	65	70
74.035	65	65	70	65	80	85
74.296	WARRIMOO					
75.313	..	..	..	65	65	70
76.259	65	70	75	..	..	..
77.040	*Up Sign on Down West Main*			X15	..	X25
77.278	60	60	65	..	..	..
77.410	VALLEY HEIGHTS					
77.563	..	..	..	70	70	75
79.294	*Up Sign on Down West Main*			60	60	65
79.419	50	50	55	..	..	..
79.460	..	..	..	X25	..	X25
79.566	..	..	..	65	65	70
79.669	SPRINGWOOD					
79.776	..	..	..	60	60	65
80.263	60	65	65	..	..	..
80.449	..	..	..	65	65	70
81.657	60	60	65	..	..	..
81.722	..	..	..	65	70	75
82.546	55	55	60	60	60	65
82.916	60	60	65	55	55	60
82.962	FAULCONBRIDGE					
83.195	65	65	70	..	..	..
84.617	..	..	..	60	65	70
84.761	..	..	..	60	60	65
86.073	55	60	65	60	65	70
86.805	LINDEN					
87.810	60	60	65	..	..	..
88.752	..	..	..	60	60	65
89.950	55	55	55	..	..	..
90.366	WOODFORD					
90.579	60	65	70	..	..	..
90.629	..	..	..	55	55	60
90.836	60	70	75	..	..	..
90.910	..	..	..	60	65	70
92.099	60	60	65	60	70	75
92.733	..	..	..	60	60	65
93.411	55	55	60	..	..	..
93.473	HAZELBROOK					
93.671	60	60	65	..	..	..
94.256	..	..	..	60	65	70
95.177	60	70	75	60	60	65
96.033	LAWSON					
96.749	60	60	65	60	70	75
97.685	BULLABURRA					
97.760	..	..	..	60	60	65
98.107	..	..	..	40	60	65
99.726	75	75	80	60	60	65
102.251	55	55	60	60	75	75
102.614	WENTWORTH FALLS					
102.858	..	..	..	35	55	60
102.909	60	75	80	..	..	..
104.735	60	60	65	60	75	80
107.299	55	55	60	60	60	65
107.592	LEURA					
107.651	..	..	..	55	55	60
107.739	55	60	65	..	..	..
109.211	..	..	..	55	60	65
109.402	50	50	55	..	..	..
109.943	KATOOMBA					
110.064	..	..	..	45	45	50
110.132	60	60	65	..	..	..
113.607	70	70	75	60	60	65
114.116	80	85	100	70	70	75
115.727	..	..	..	80	100	115
115.803	MEDLOW BATH					
116.200	65	65	70	..	..	..
116.219	..	..	..	80	80	80
116.853	55	55	60	65	65	75
117.243	75	75	80	55	55	60
119.467	60	60	65	75	75	80
120.724	BLACKHEATH					
121.600	65	65	70	..	..	..
121.655	..	..	..	60	60	65
124.455	40	65	75	..	..	..
124.519	..	..	..	65	65	70
125.050	65	65	75	..	..	..
126.370	..	..	..	70	70	75
126.595	..	..	..	40	40	40
126.596	50	50	60	..	..	..
126.720	MT. VICTORIA					
126.850	..	..	..	40	40	40
126.910	65	65	70	..	..	..
127.580	..	..	..	40	40	40
128.023	..	..	..	65	65	70
128.091	85	85	90	..	..	..
129.233	85	95	95	85	85	90
131.958	80	80	85	95	100	105
132.635	..	..	..	60	60	65
132.829	75	75	80	..	..	..
137.126	BELL					
137.387	..	..	..	75	75	80
137.920	100	100	110	..	..	..
138.152	..	..	..	45	75	80
139.770	70	70	75	95	95	100
140.854	60	60	65	..	..	..
141.099	..	..	..	70	70	75
141.484	65	65	70	60	60	70
141.763	NEWNES JUNCTION					
143.549	..	..	..	65	65	70
143.554	70	80	85	..	..	..
145.240	X25	..	X35	..	..	..
145.240	*Up Sign on Down West Main*			X25	..	X35
145.394	65	65	70	*Down Sign on Up West Main*		
145.406	65	65	70	70	80	85
150.520	X25	..	X35	*Down Sign on Up West Main*		
150.587	*Up Sign on Down West Main*			65	65	70
150.700	..	..	..	X25	..	X35
150.937	ZIG ZAG					
150.998	..	..	..	65	65	70
151.150	45	45	50	..	..	..
152.268	60	70	70	45	45	50
153.144	..	..	..	50	75	80
154.175	LITHGOW COAL STAGE BOX					
154.305	70	75	75	..	..	..
155.198	X20	..	..	*8A Pts Down Sign Up Main*		
155.224	LITHGOW YARD BOX					
155.270	*8B Pts Up Sign Down Main*			X20	..	..
155.479	..	..	..	50	90	90
155.781	LITHGOW					
END GENERAL/MEDIUM/HIGH SIGNS – START NORMAL/XPT SIGNS						

KILOM-ETRAGE	DOWN			UP		
155.986	..	..	..	#60		%70
156.016	#70		%80	..	..	..
158.753	#80		%90	#70		%85

 # Down/Up Normal Signs
% Down/Up XPT signs

Station data

Version August 2017

Station	Kilo – metrage	Signal Box Status	Hours of Signal Box	Facilities
Penrith	55.086	A	Always	P, WC
Emu Plains	57.439	C	Controlled from Penrith	P
Lapstone	63.617			P
Glenbrook	67.080			P
Blaxland	71.484			P
Warrimoo	74.296			P
Valley Heights	77.410	C	Controlled from Blacktown	P
Springwood	79.669	C	Controlled from Blacktown	P
Faulconbridge	82.962			P
Linden	86.805			P
Woodford	90.366			P
Hazelbrook	93.473			P
Lawson	96.033	C	Controlled from Blacktown	P
Bullaburra	97.685			P
Wentworth Falls	102.614			P
Leura	107.592			P
Katoomba	109.943	C	Controlled from Blacktown	P
Medlow Bath	`115.803			P
Blackheath	120.724			P
Mt. Victoria	126.720	A	Always	P
Bell	137.126			P
Newnes Junction	141.763	C	Controlled from Blacktown as required for Clarence Colliery	P, S
Edgecombe	145.200	C	Controlled from Lithgow Coal Stage Signal Box	
Zig Zag	150.937	C	Controlled from Lithgow Coal Stage Signal Box	P, LP
Lithgow Coal Stage Signal Box	154.175	A	Always	
Lithgow Yard Signal Box	155.224	A	Always	
Lithgow	155.781			P, TT

Tonnage signals

Version 10.0 December 2012

Certain signals listed herein are treated as **Tonnage Signals**, that is to say, in order to avoid the risk of trains over a certain tonnage being brought to a stand at signals where it would be difficult for them to restart, these tonnage signals shall not be passed by trains conveying loads in excess of 75% of the prescribed load unless the Tonnage signal is in the clear position (or by telephone instructions in the case of failure).

The following signals are to be treated as a Tonnage signal, in accordance with Sydney Trains Network Rule *NSG 608 Passing signal at STOP*.

Kilometrage	Signal Number	Section located
77.500	SD 21 Valley Heights	Valley Heights – Springwood
77.574	SD 23 Valley Heights	Valley Heights – Springwood
93.331	58.1	Springwood – Lawson

Freight train braking requirements

Version 10.0 December 2012

Conditions for freight trains – Down direction

(a) Ballast and work trains, with less than 80% of vehicles fitted with fixed exhaust chokes, operating from the Metropolitan area beyond Valley Heights and terminating before Lithgow then returning ***LOADED*** to the Metropolitan area are required to have a HP grade inspection carried out on the train.

Conditions for freight trains – Up direction

The following conditions apply to loaded freight trains operating between Katoomba and Valley Heights:

(a) Braking requirements

(1) Unless at least 80% of the train mass is fitted with approved fixed exhaust chokes, freight trains are required to have a HP grade inspection.

(2) Grade control valves (where fitted) are to be set in the IP position at the inspection location or other approved location.

(3) Dynamic / Regenerative brake shall be used if available.

(4) Maximum length of train with single piped vehicles is **1100 metres**.

(5) A HP grade inspection does not apply to ECP braked trains.

Refer also to TS TOC.1 General Instruction Pages – Section 3 Train Operations.

Conditions for the operation of self-propelled diesel trains

Version December 2018

The following operating conditions are for diesel self-propelled trains (XPT) between Penrith and Bowenfels.

XPT	Conditions of Operation – Down Direction
√	All power cars operating
- -	All engines operating
√	Maximum 7 trailer cars with 2 power cars or maximum 3 trailer cars with 1 power car powering and 1 power car disabled (see note below)
√	All compressors operating
√	Emergency coupler available
√	No brake cut outs permitted
√	Electro-pneumatic (EP) brake, automatic brake, hand and all spring parking brakes fully operational

XPT	Conditions of Operation – UP Direction
√	All power cars operating
- -	All engines operating
√	Maximum 7 trailer cars with 2 power cars or maximum 4 trailer cars with 1 power car powering and 1 power car disabled (see note below)
√	All compressors operating (compressor on any dead power car to be switched to hotel supply)
√	Emergency coupler available
√	No brake cut outs permitted
√	Electro-pneumatic (EP) brake, automatic brake, hand and all spring parking brakes fully operational

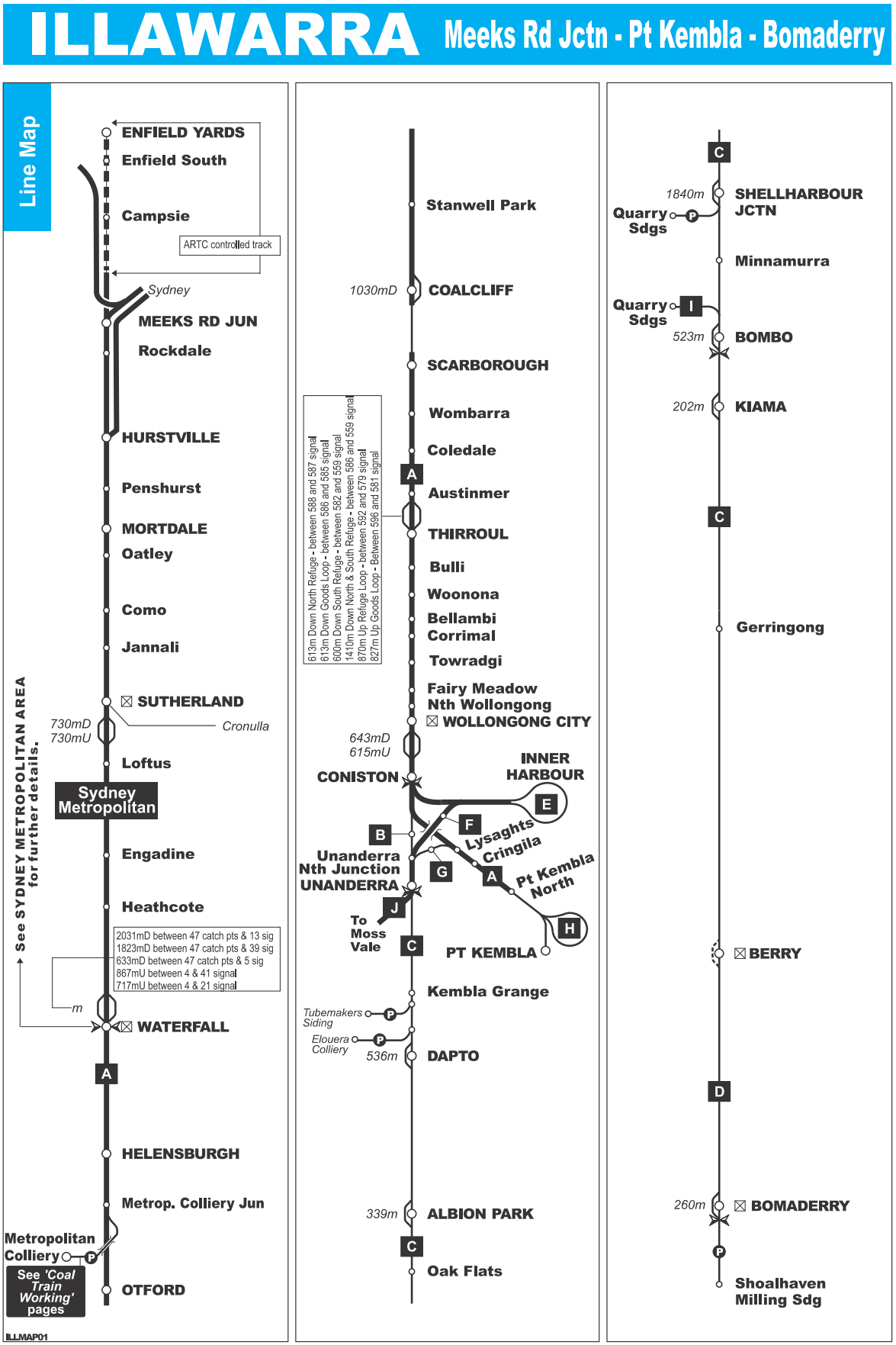
Note: As a limit for normal service operation, a maximum of 7 trailer cars with 2 power cars or 4 trailer cars with 1 power car powering and 1 power car disabled is permitted. For special event services (such as annual Parkes Elvis Festival) a maximum of 8 trailers with 2 power cars is permitted, all other operating conditions apply as detailed above.

Section 15

Illawarra Division pages

15. Illawarra Division pages

Version August 2020



July 2020 *UNCONTROLLED WHEN PRINTED*

Maximum speed of locomotives and rolling stock

Version August 2021

	Waterfall - Port Kembla	Coniston-Unanderra	Unanderra – Berry	Berry – Bomaderry (i)	Coniston – Inner Harbour	South Frk Unanderra North Junction	Allans Creek – Unanderra North Jct	Port Kembla Balloon Loop	Quarry Siding Bombo 2 (i)	Unanderra – 91.080km MossVale line
Class of Line	**1**	**1**	**1(f)**	**1**	**1**	**1**	**1**	**1**	**2**	**1**
Line Map Reference	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
LOCOMOTIVES										
Class	**Maximum Speed km/h**									
90, TT(139t), TT100 (139t), C44aci(139)(g)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
31, L, LQ, LZ	100	100	100(h)	100(e)	25	35	60	25	15	50
Refer to note (j) for locomotives	115	100	80	80(e)	25	35	60	25	15	50
CSR, QBX	115	100	80	80(e)	25	35	N/A	25	N/A	50
CLP, GL, NR	115	100	80(a)	80(a)	25	35	60	25	15	50
14, 81, 82, ALF, AN, BL, CLF, G, VL	115	100	80	80	25	35	60	25	15	50
42, 80, 80s, B, DL	115	100	80	80	25	35	60	25	15	50
18	90	90	80	80	25	35	60	25	15	50
442, 442s, 700, GM(12), S, X	115	100	80	80	25	35	60	25	15	50
32	100	100	80	80	25	35	60	25	15	50
1200,22,421,422, 4,45,45s,600,DC,EL,FL,GM(1),HL	115	100	100	100	25	35	60	25	15	50
43, 44s, 930	115	100	100	100	25	35	60	25	15	50
423	80	80	80	80	25	35	60	25	15	50
D, K, T	100	100	100	100	25	35	60	25	15	50
47, 48, 48200, 48s, 49, 830, 900, GPU, MM, PL	100	100	100	100	25	35	60	25	15	50
73 (d)	70	70	70	70	25	35	60	25	15	50
46, 86 Electric	100(b)	100(b)	100(b,c)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
59, 32(P) Steam	80	80	80	80	N/A	35	N/A	N/A	N/A	50
Multiple locomotive working (powering locomotives horsepower limit per locomotive group)	U (16000)	U (16000)	U (16000)	U (16000)	U (16000)	U (16000)	U (16000)	U (16000)	U (16000)	U (16000)
FREIGHT										
Class A	115	115	100	100	25	35	60	25	15	50
Class B	100	100	80	80(e)	25	35	60	25	15	50
Class C	80	80	80	80	25	35	60	25	15	50
Class D	65	65	60	60	25	35	60	25	15	50
Class E	80	80	70	70	25	35	60	25	15	50
Class F	65	65	65	65	25	35	60	25	15	50
Class G	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PASSENGER										
XPT	160	160	140	140	25	35	60	25	15	50
XPLORER	145	145	140	140	25	35	60	25	15	50
DIESEL RAILCARS	115	115	100	100	25	35	60	25	15	50
LOCO HAULED	115	115	100	100	25	35	60	25	15	50

NOTES

U = Unlimited number of locomotives (subject to horsepower limit per locomotive group).
(a) **NR** locomotives restricted to operate between **Unanderra** and **Dunmore**.
(b) Applies to SINGLE and distributed locomotive (separated by at least 70 metres of train). No OHW restrictions apply. Both pantographs may be raised.
(c) Unanderra to Kiama only.
(d) Only locomotives fitted with vigilance control system are approved to operate outside shunting yards.
(e) These locomotives and freight vehicles when loaded to axle loads greater than 22 tonnes are NOT permitted to use Berry Down Siding.
(f) Omega Tunnels 121.000km - 125.000km have track restrictions, refer to specific notes in this table and notes under individual vehicles in TS TOC 1 Section 10 and 11.
(g) C44aci(139t) locomotives provisioned between 134t and 139t include 92, 93, 6000, 6020, ACC, CEY, CF, FIE, GWU, MRL, XRN, PHC
(h) 31, L, LQ, LZ locomotives are limited to a maximum speed of 70 km/h through the Omega Tunnels, 121.000km to 125.000km.
(i) Rolling stock classified with R9 notes not permitted between Dunmore (Shellharbour Junction) and Bomaderry.
(j) 1100, 92, 93, 6000, 6020, ACC, C, CEY, CF, CM, FIE, GWA, GWU, LDP, QL, RL, LDP10, MRL, PHC, SCT, SSR, TT(134t), TT100 (134t), WH, XRN

SAFEWORKING SYSTEMS

WATERFALL TO BOMADERRY			
Waterfall to Coal Cliff	Rail Vehicle Detection (Bi directional)	**Dapto to Albion Park**	Rail Vehicle Detection
Coal Cliff to Scarborough	Rail Vehicle Detection	**Albion Park to Dunmore**	Rail Vehicle Detection
Scarborough to Wollongong – WG466D, WG468U	Rail Vehicle Detection (Bi directional)	**Dunmore to Bombo**	Rail Vehicle Detection
Austinmer to Bulli	Thirroul Yard area	**Bombo to Kiama**	Rail Vehicle Detection
Wollongong (Unanderra North – WG1001, WG1003, WG1005, WG1007) to **Unanderra**	Rail Vehicle Detection (Bi directional)	**Kiama to Berry**	Rail Vehicle Detection
Unanderra to Dapto	Rail Vehicle Detection	**Berry to Bomaderry**	Rail Vehicle Detection with Axle Counters
INNER HARBOUR			
Wollongong (WG121D) **to Inner Harbour Balloon Loop**	Wollongong Yard Area	**Unanderra North** (WG1003, WG1005) to Inner Harbour Balloon Loop	Wollongong Yard Area
PORT KEMBLA BRANCH – Wollongong to Port Kembla	Rail Vehicle Detection		

General - Sectional running times and full sectional loads

Version April 2020

The locomotive-load-run times configurations (DOWN loads and UP loads) published in this section are for existing approved paths in the Standard Working Timetable (SWTT). For configurations that are not listed, the train shall run at the discretion of the train controller, based on the following:

- The trailing load does not exceed the sum of individual locomotive full sectional loads, accounting for load reductions specified in (TS TOC.1 Section 2.11 and 2.12)
- There is capacity on the network (based on the live status and the SWTT/DWTT) for the train controller to allocate additional times for the train if longer journey or sectional running times, or both are foreseen.
- The operator operates to the assigned schedule or under the direction of the train controller to ensure the train's arrival at critical junctions or destinations does not cause train control conflicts to the network.

The sectional running times published are based on RailNet Running Time Profiles (simulations). Train consists (locomotive and trailing loads) used in the simulations are based on the length limits in the train operating length diagram in TS TOC 1 (Section 1.11) with no speed restrictions applied.

Any planned and timetabled sectional running times used in ad hoc paths, Daily Working Timetable, and Standard Working Timetable have additional time added to the published running times (for example recovery time), which should be accounted for by the train controller / planner / programmer as appropriate.

DOWN loads

Version December 2020

			LOAD – TONNES				TRAIN DATA		
	SECTIONS	LOCOMOTIVE CLASS = L	SINGLE	DOUBLE	TRIPLE	QUAD	VEHICLE CLASS	SECT RUN TIMES	NOTES
1	SYDNEY METROP – UNANDERRA	L2	- -	- -	2700	- -	ABC	A1	%
2	SYDNEY METROP – UNANDERRA	AC6	- -	- -	2700	- -	ABC	A1	%
3	SYDNEY METROP – BOMADERRY	L2/L3/L4	- -	606	- -	- -	ABC	C1	
4	SYDNEY METROP – BOMADERRY	L4/L5 + L2	- -	606	- -	- -	ABC	C1	
5	SYDNEY METROP – BOMBO	L13	- -	- -	500	- -	ABC	C1	1
6	SYDNEY METROP – PT KEMBLA (3)	L3/L4	- -	606	- -	- -	ABC	C1	
7	SYDNEY METROP – PT KEMBLA (3)	#AC6 + #L2	- -	2750	- -	- -	ABC	C2	#C44ACi & NR only
8	SYDNEY METROP – PT KEMBLA (3)	AC6 + L2	- -	2410	- -	- -	ABC	C2	b
9	SYDNEY METROP – PT KEMBLA (3)	#AC6 + 2 X #L2	- -	- -	4050	- -	ABC	C2	#C44ACi & NR only
10	SYDNEY METROP – PT KEMBLA (3)	AC6 + 2 X L2	- -	- -	3530	- -	ABC	C2	b
11	SYDNEY METROP – PT KEMBLA (3)	2 X #AC6 + #L2	- -	- -	4200	- -	ABC	C2	#C44ACi & NR only
12	SYDNEY METROP – PT KEMBLA (3)	2 X AC6 + L2	- -	- -	3700	- -	ABC	C2	b
13	SYDNEY METROP – PT KEMBLA (3)	L2	1300	2600	- -	-.-	ABCE	C2	2
14	SYDNEY METROP – PT KEMBLA (3)	L3/L4	1131	2262	3393	4524	ABC	C2	2
15	SYDNEY METROP – BOMADERRY	AC6	1500	3000	4600*	- -	ABC	C2	*
16	SYDNEY METROP – BOMADERRY	L3/L4	1131	2262	3393	4524	ABCE	C2/C3	4
17	SYDNEY METROP – BOMADERRY	L5	1056	2112	3168	4224	ABCE	C2/C3	4
18	SYDNEY METROP – BOMADERRY	L6	926	1852	2778	3704	ABCE	C2/C3	4
19	SYDNEY METROP – BOMADERRY	L7	909	1818	2727	3636	ABCE	C2	
20	SYDNEY METROP – BOMADERRY	L8	875	1750	2625	3500	ABCE	C2	
21	SYDNEY METROP – BOMADERRY	L9	750	1500	2250	3000	ABCE	C2	
22	SYDNEY METROP – BOMADERRY	L10	805	1610	- -	- -	ABCE	C2	
23	SYDNEY METROP – BOMADERRY	L11	660	1320	1980	2640	ABCE	C2	
24	SYDNEY METROP – BOMADERRY	L12	615	1230	- -	- -	ABCE	C2	
25	PT KEMBLA – BOMADERRY	L3/L4	1200	2400	3600	- -	ABC	C4	2
26	UNANDERRA – BOMADERRY	L3/L4	1131	2262	3393	4254	ABC	C2	

Notes:

1. Empty ballast train.
2. Includes Inner Harbour.
3. Includes Unanderra.
4. C3 schedules are only for the conveying of wagons with speed restrictions applied between 121.000 km and 125.000 km (Omega Tunnels) due to track restrictions.

% Trains conveying D classification vehicles to run to C Schedule without loss of time.

b The Ac6 locomotive shall be a C44ACi or GT46C-ACe type AC locomotive and the L2 locomotive can be NR or AN class.

* Total trailing load limited to 4500t only if consist contains any SDA1 type AC locomotives.

\# A full listing of approved AC6 locomotives (United Group Ltd – C44ACi, Downer EDI Rail – GT46C-ACe, and CRRC Ziyang – SDA1) is summarised under Table 8 Approved locomotives grouped into load categories – locomotive type AC in TS TOC 1.

DOWN – sectional running times and full sectional loads

Version April 2021 (5.14)

	#SECTIONAL RUNNING TIMES (INDICATIVE)						FULL SECTIONAL LOADS LOCOMOTIVE CATEGORIES = L													GRADE
	%A1	C1	C2	C3	C4	Loco	AC6	2	3	4	5	6	7	8	9	10	11	12	13	
MARRICKVILLE JCT to:	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘
MEEKS RD JCT	02:06	02:12	02:06	02:06	--	02:30	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
WOLLI CREEK JCT	05:00	04:36	05:00	04:36	--	01:48	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
HURSTVILLE	09:06	07:06	10:48	10:06	--	07:00	2171	1892	1743	1646	1543	1359	1328	1285	1105	1068	977	912	636	1:60
MORTDALE	02:30	02:18	02:54	02:42	--	03:12	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
SUTHERLAND	09:24	07:42	12:30	13:00	--	07:36	1500	1300	1200	1131	1056	926	909	875	750	725	660	615	410	1:40
WATERFALL	14:42	12:18	21:18	20:54	--	10:24	1500	1300	1200	1131	1056	926	909	875	750	725	660	615	410	1:40
HELENSBURGH	08:54	08:30	09:00	08:30	--	10:48	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
METROP. COLL JCT	06:42	02:36	02:42	02:36	--	03:30	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
OTFORD	11:42	04:12	04:18	04:24	--	05:12	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
COALCLIFF	21:00	07:54	08:36	08:12	--	09:06	2766	2414	2227	2104	1976	1743	1699	1650	1422	1372	1259	1175	820	1:80
SCARBOROUGH	09:54	04:12	04:36	04:36	--	03:30	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
THIRROUL	07:42	07:06	07:18	07:00	--	08:00	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
CORRIMAL	05:24	05:24	05:36	05:36	--	05:24	2766	2414	2227	2104	1976	1743	1699	1650	1422	1372	1259	1175	820	1:80
WOLLONGONG	04:24	04:48	04:54	04:48	--	04:24	2766	2414	2227	2104	1976	1743	1699	1650	1422	1372	1259	1175	820	1:80
CONISTON	01:18	01:18	01:24	01:18	--	01:30	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	Level
UNANDERRA NORTH JCT	03:48	02:54	03:24	03:06	--	02:00	3775	3300	3047	2882	2711	2395	2330	2271	1959	1887	1737	1621	1131	1:120
UNANDERRA	*04:24	02:42	03:30	02:54	↘	01:54	3775	3300	3047	2882	2711	2395	2330	2271	1959	1887	1737	1621	1131	1:120
WONGAWILLI JCT	--	--	--	--	--	--	3887	3398	3138	2968	2792	2467	2400	2340	2018	1944	1790	1670	1166	1:125
DAPTO	--	05:42	06:06	06:06	06:00	04:48	3887	3398	3138	2968	2792	2467	2400	2340	2018	1944	1790	1670	1166	1:125
ALBION PARK	--	06:30	06:36	06:42	06:48	05:48	2766	2414	2227	2104	1976	1743	1699	1650	1422	1372	1259	1175	820	1:80
SHELLHARBOUR JCT	--	04:36	05:42	05:48	05:54	04:00	1676	1458	1341	1265	1183	1040	1018	980	842	815	743	693	483	1:44
DUNMORE	--	01:12	01:12	01:12	01:12	01:18	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
BOMBO	--	06:30	06:24	06:30	06:30	06:30	1846	--	1479	1396	1307	1149	1125	1085	933	902	823	768	536	1:50
KIAMA	--	02:36	03:00	02:36	02:48	02:12	3297	--	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
GERRINGONG	--	--	--	--	--	--	2011	--	1613	1523	1427	1256	1228	1186	1020	986	901	841	587	1:55
BERRY	--	20:30	22:36	23:12	22:24	16:18	2326	--	1869	1766	1656	1459	1425	1380	1188	1147	1051	980	684	1:65
BOMADERRY	--	11:12	12:18	15:54	12:06	09:18	2623	--	2111	1995	1872	1651	1610	1563	1346	1299	1191	1112	776	1:75
Coniston – Inner Harbour																				
CONISTON	--	--	--	--	--	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘
INNER HARBOUR	--	--	--	--	--	08:12	3775	3300	3047	2882	2711	2395	2330	2271	1959	1887	1737	1621	1131	1:120
Coniston – Port Kembla																				
CONISTON	--	↘	↘	--	--	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘
LYSAGHTS	--	02:42	02:48	--	--	03:18	3887	3398	3138	2968	2792	2467	2400	2340	2018	1944	1790	1670	1166	1:132
CRINGILA	--	01:48	01:54	--	--	01:36	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	Level
PT KEMBLA NTH	--	01:12	01:12	--	--	01:12	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
PT KEMBLA YARD	--	01:42	01:42	--	--	01:42	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	Level
Unanderra – 91.080km (Moss Vale Line)																				
UNANDERRA	--	--	--	--	--	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘
89.200km	Refer to Section 18 Coal train					--	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
91.080km	working pages (page 107) for times					02:30	1133	903	791	745	696	551	543	517	442	430	388	362	253	1:30
Unanderra – Bomaderry																				
UNANDERRA	--	--	↘	--	--	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘
DAPTO	--	--	06:06	--	--	04:48	3887	3398	3138	2968	2792	2467	2400	2340	2018	1944	1790	1670	1166	1:125
ALBION PARK	--	--	06:36	--	--	05:48	2766	2414	2227	2104	1976	1743	1699	1650	1422	1372	1259	1175	820	1:80
SHELLHARBOUR JCT	--	--	05:42	--	--	04:00	1676	1458	1341	1265	1183	1040	1018	980	842	815	743	693	483	1:44
DUNMORE	--	--	01:12	--	--	01:18	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
BOMBO	--	--	06:24	--	--	06:30	1846	--	1479	1396	1307	1149	1125	1085	933	902	823	768	536	1:50
KIAMA	--	--	03:00	--	--	02:12	3297	--	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
BERRY	--	--	22:36	--	--	16:18	2326	--	1869	1766	1656	1459	1425	1380	1188	1147	1051	980	684	1:65
BOMADERRY	--	--	12:18	--	--	09:18	2623	--	2111	1995	1872	1651	1610	1563	1346	1299	1191	1112	776	1:75
Port Kembla – Unanderra																				
PT KEMBLA YARD	--	--	--	--	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘	↘
PT KEMBLA NTH	--	--	--	--	00:48	00:30	*3775*	*3300*	*3047*	*2882*	*2711*	*2395*	*2330*	*2271*	*1959*	*1887*	*1737*	*1621*	*1131*	*1:120*
CRINGILA	--	--	--	--	02:24	02:00	*3297*	*2881*	*2659*	*2514*	*2363*	*2086*	*2032*	*1975*	*1704*	*1643*	*1511*	*1410*	*984*	*1:100*
LYSAGHTS	--	--	--	--	02:12	01:42	*3297*	*2881*	*2659*	*2514*	*2363*	*2086*	*2032*	*1975*	*1704*	*1643*	*1511*	*1410*	*984*	*1:100*
UNANDERRA NORTH JCT	--	--	--	--	02:36	02:36	*2011*	*1752*	*1613*	*1523*	*1427*	*1256*	*1228*	*1186*	*1020*	*986*	*901*	*841*	*587*	*1:55*
UNANDERRA	--	--	--	--	03:00	01:48	*3775*	*3300*	*3047*	*2882*	*2711*	*2395*	*2330*	*2271*	*1959*	*1887*	*1737*	*1621*	*1131*	*1:120*

% A1 refers to Interstate Container trains conveying High Containers – refer to page 61.

For other Sydney Metropolitan area running times, refer to diagram in the **'Sydney Metropolitan Division Pages'** *Sydney Metropolitan Area – freight and locomotive running times* (page 74).

* Continues to Moss Vale.

UP loads

Version December 2020

			LOAD – TONNES				TRAIN DATA		
	SECTIONS	LOCOMOTIVE CLASS = L	SINGLE	DOUBLE	TRIPLE	QUAD	%VEHICLE CLASS	SECT RUN TIMES	NOTES
1	UNANDERRA – SYDNEY METROP	L2	- -	- -	2700	- -	ABC	A1	%
2	UNANDERRA – SYDNEY METROP	AC6	- -	- -	2700	- -	ABC	A1	%
3	BOMADERRY- SYDNEY METROP	L3/L4	750	1500	2250	- -	ABC	C1	
4	BOMADERRY- SYDNEY METROP	L3/L4	1140	2280	3420	4560	ABCE	C2	
5	BOMADERRY- SYDNEY METROP	L6	1062	2124	3186	4248	ABCE	C3	
6	BOMADERRY- SYDNEY METROP	L7	1040	2080	3120	4160	ABCE	C3	
7	BOMADERRY- SYDNEY METROP	L8	1002	2004	3006	4008	ABCE	C3	
8	BOMADERRY- SYDNEY METROP	L9	860	1720	2580	3440	ABCE	C3	
9	BOMADERRY- SYDNEY METROP	L11	759	1518	2277	3036	ABCE	C3	
10	BOMADERRY- SYDNEY METROP	L12	708	1416	2124	2832	ABCE	C3	
11	DUNMORE – SYDNEY METROP	L2	- -	3000	- -	- -	ABCEF	C3	
12	DUNMORE – SYDNEY METROP	L2/L3/L4	1400	2800	- -	- -	ABCE	C3	
13	DUNMORE – SYDNEY METROP	L4/L5 + L2	- -	2760	- -	- -	ABCE	C3	
14	DUNMORE – SYDNEY METROP	L5	- -	2780	- -	- -	ABCE	C3	2
15	PT KEMBLA –SYDNEY METROP	3 X L2 + AC6	- -	- -	- -	5300	ABC	C3	b
16	PT KEMBLA –SYDNEY METROP	L2 + L3/L4	- -	2800	- -	- -	ABC	C3	
17	PT KEMBLA –SYDNEY METROP (3)	L10	805	1610	- -	- -	ABCE	C3	1
18	PT KEMBLA –SYDNEY METROP (3)	L2	2230	4460	6690	- -	ABC	C4	1
19	PT KEMBLA –SYDNEY METROP (3)	AC6	2623	5246	7869	- -	ABC	C4	1
20	PT KEMBLA –SYDNEY METROP (3)	AC6 + L2	- -	4200	- -	- -	ABC	C4	b
21	PT KEMBLA –SYDNEY METROP (3)	AC6 + 2 X L2	- -	- -	6150	- -	ABC	C4	b
22	PT KEMBLA –SYDNEY METROP (3)	2 X AC6 + L2	- -	- -	6450	- -	ABC	C4	b
23	PT KEMBLA –SYDNEY METROP	L3/L4	2000	4000	6000	- -	ABC	C5	1
24	PT KEMBLA –SYDNEY METROP	L5	1850	3700	5550	- -	ABC	C5	1

Notes:

1 Includes Inner Harbour.

2 Tested and approved double unit load.

3 Includes Unanderra.

% Trains conveying D classification vehicles to run to C Schedule without loss of time.

b The AC6 locomotive shall be a C44ACi or GT46C-ACe type AC locomotive and the L2 locomotive can be NR or AN class. A full listing of approved AC6 locomotives (United Group Ltd – C44ACi, Downer EDI Rail – GT46C-ACe and CRRC Ziyang – SDA1) is summarised under Table 8 Approved locomotives grouped into load categories – locomotive type AC in TS TOC 1.

UP – sectional running times and full sectional loads

Version April 2021 (5.14)

	#SECTIONAL RUNNING TIMES (INDICATIVE)							FULL SECTIONAL LOADS LOCOMOTIVE CATEGORIES = L													GRADE
	%A1	C1	C2	C3	C4	C5	Loco	AC6	2	3	4	5	6	7	8	9	10	11	12	13	
BOMADERRY																					
BERRY	- -	11:54	13:06	12:24	- -	- -	10:00	2766	- -	2227	2104	1976	1743	1699	1650	1422	1372	1259	1175	820	1:80
GERRINGONG	- -	- -	- -	- -	- -	- -	- -	2623	- -	2111	1995	1872	1651	1610	1563	1346	1299	1191	1112	776	1:76
KIAMA	- -	20:54	21:24	21:54	- -	- -	17:36	2477	- -	1992	1882	1766	1557	1519	1473	1268	1224	1122	1047	731	1:70
BOMBO	- -	03:42	03:42	03:42	- -	- -	02:06	5283	- -	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
DUNMORE	- -	07:24	07:48	08:12	- -	- -	06:36	1846	1607	1479	1396	1307	1149	1125	1085	933	902	823	768	536	1:50
SHELLHARBOUR JCT	- -	01:18	01:18	01:24	- -	- -	01:06	1710	1488	1400	1400	1208	1062	1040	1002	860	833	759	708	494	1:46
ALBION PARK	- -	06:00	06:18	06:48	- -	- -	05:00	1710	1488	1400	1400	1208	1062	1040	1002	860	833	759	708	494	1:46
DAPTO	- -	08:18	08:36	09:00	- -	- -	06:00	1846	1607	1479	1400	1307	1149	1125	1085	933	902	823	768	536	1:50
WONGAWILLI JCT	- -	- -	- -	- -	- -	- -	- -	1846	1607	1479	1400	1307	1149	1125	1085	933	902	823	768	536	1:50
UNANDERRA	- -	05:24	05:30	05:30	- -	- -	04:30	1846	1607	1479	1400	1307	1149	1125	1085	933	902	823	768	536	1:50
UNANDERRA NTH JCT	*02:48	02:54	02:54	03:00	- -	- -	01:48	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	Level
CONISTON	02:24	02:06	02:12	02:18	- -	- -	02:00	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	Level
WOLLONGONG	01:36	01:36	01:36	01:36	01:36	01:54	01:12	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	Level
CORRIMAL	04:42	04:54	05:00	05:06	05:06	05:18	04:30	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
THIRROUL	05:48	05:54	05:54	06:00	06:18	06:30	05:18	2623	2289	2111	1995	1872	1651	1610	1563	1346	1299	1191	1112	776	1:75
SCARBOROUGH	07:54	08:24	10:06	11:48	12:42	16:00	06:36	2623	2289	2111	1995	1872	1651	1610	1563	1346	1299	1191	1112	776	1:75
COALCLIFF	10:18	04:00	04:18	04:36	04:48	05:24	04:48	3775	3300	3047	2882	2711	2395	2330	2271	1959	1887	1737	1621	1131	1:120
OTFORD	21:18	08:42	10:12	11:24	12:00	14:54	07:36	2623	2289	2111	1995	1872	1651	1610	1563	1346	1299	1191	1112	776	1:75
METROP. COLL JCT	11:12	05:30	05:54	06:24	06:36	07:36	05:06	2623	2289	2111	1995	1872	1651	1610	1563	1346	1299	1191	1112	776	1:75
HELENSBURGH	07:00	02:12	03:00	03:48	04:06	05:42	01:48	2623	2289	2111	1995	1872	1651	1610	1563	1346	1299	1191	1112	776	1:75
WATERFALL	09:24	10:24	14:00	17:06	18:36	24:54	08:06	2766	2414	2227	2104	1976	1743	1699	1650	1422	1372	1259	1175	820	1:80
SUTHERLAND	12:48	13:00	13:06	13:42	13:54	14:36	15:00	3775	3300	3047	2882	2711	2395	2330	2271	1959	1887	1737	1621	1131	1:120
MORTDALE	07:24	07:30	07:48	08:12	08:18	09:00	08:24	2766	2414	2227	2104	1976	1743	1699	1650	1422	1372	1259	1175	820	1:80
HURSTVILLE	02:18	02:42	03:18	03:48	04:12	05:24	02:00	2623	2289	2111	1995	1872	1651	1610	1563	1346	1299	1191	1112	776	1:75
WOLLI CREEK JCT	07:36	07:36	07:54	08:00	08:12	08:30	09:36	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
MEEKS RD JCT	02:12	02:00	02:12	02:00	02:12	02:12	01:54	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
MARRICKVILLE JCT	03:48	03:54	03:48	03:54	03:48	03:48	02:24	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
Port Kembla – Coniston																					
PT KEMBLA YARD	- -	- -																			
PT KEMBLA NTH	- -	- -	00:48	00:48	00:48	00:48	00:30	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
CRINGILA	- -	- -	02:24	02:24	02:24	02:24	02:00	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	DG
LYSAGHTS	- -	- -	02:12	02:18	02:12	02:18	01:42	5283	4624	4274	4044	3809	3369	3274	3199	2761	2658	2452	2288	1600	Level
CONISTON	- -	- -	02:30	02:30	02:36	02:48	02:36	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1:100
Inner Harbour – Coniston																					
INNER HARBOUR	- -																				
CONISTON	- -	03:18	- -	03:00	03:18	03:30	03:24	3039	2654	2449	2315	2175	1920	1870	1818	1567	1511	1388	1295	904	1:90

% A1 refers to Interstate Container trains conveying High Containers – refer to page 61.

For other Sydney Metropolitan area running times, refer to diagram in the **'Sydney Metropolitan Division Pages'** *Sydney Metropolitan Area – freight and locomotive running times* (page 74).

* From Moss Vale Line.

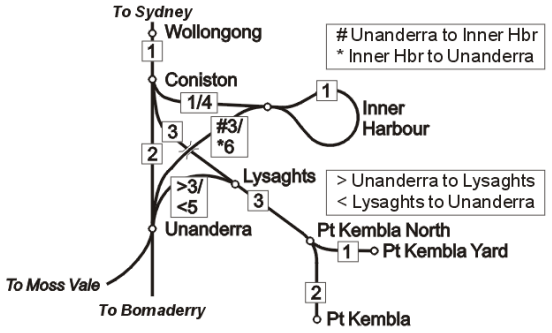
Wollongong local area – loads

WOLLONGONG - PORT KEMBLA - INNER HARBOUR - UNANDERRA -

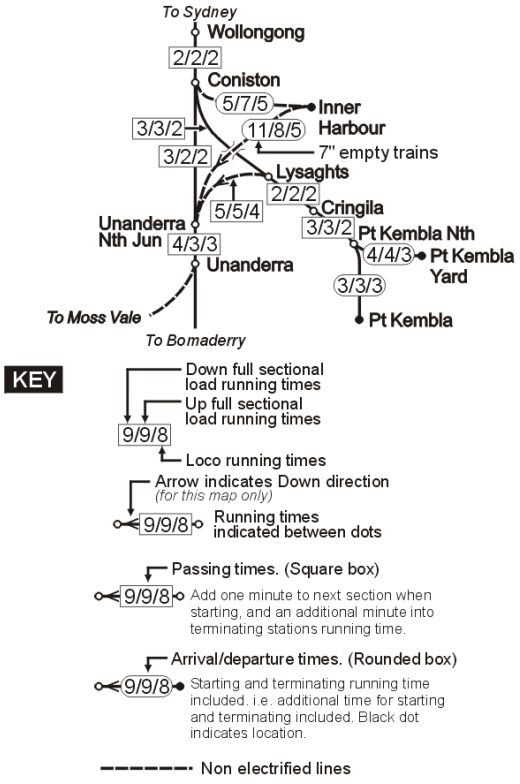
Local area Full sectional Loads

FULL LOAD TABLE	LOCOMOTIVE CATEGORY												
1	AC6	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13
1	3775	3300	3047	2882	2711	2395	2330	2271	1959	1887	1737	1621	1131
2	3542	3096	2858	2702	2541	2245	2185	2128	1835	1768	1627	1518	1059
3	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984
4	3039	2654	2449	2315	2175	1920	1870	1818	1567	1511	1388	1295	904
5	2011	1752	1613	1523	1427	1256	1228	1186	1020	986	901	841	587
6	1846	1607	1479	1396	1307	1149	1125	1085	933	902	823	768	536

Refer to table for loads. Where only one figure is shown e.g. 1 this represents the Down and Up load. Where two figures are shown the first figure represents the Down load and the second figure represents the Up load e.g. 3/5 This table does not give the authority for all classes of locomotives to run on all sections of line. Refer to MAXIMUM SPEED OF LOCOMOTIVES AND ROLLING STOCK table for authority to run on each section



Local area Sectional Running Times



KEY

August 2012

Location of speed signs

Version April 2021

Waterfall to Thirroul

		DOWN MAIN						UP MAIN					
	KILO-	▼ DOWN SIGNS▼			▲ UP SIGNS▲			▲ UP SIGNS▲			▼ DOWN SIGNS▼		
LOCATION	METRAGE	GENERAL	MEDIUM	HIGH	GENERAL	MEDIUM	HIGH	GENERAL	MEDIUM	HIGH	GENERAL	MEDIUM	HIGH
WATERFALL	38.741												
	38.783	..	..	..	..	..	..	45	45	45	Up Refuge		
	38.835	..	..	..	..	..	..	57B Points Up Refuge			X50	..	..
	38.910	..	..	..	..	..	..	X50	57B points Up Refuge				
	39.174	..	..	..	..	..	..	50	55	60	***60***	***75***	***80***
	39.234	60	75	80	***55***	***55***	***60***	..	..	..	***..***	***..***	***..***
	40.605	60	60	65	***60***	***75***	***80***	60	75	80	***60***	***60***	***65***
	40.930	55	55	55	***60***	***60***	***65***	..	..	..	***55***	***55***	***55***
	40.980	..	..	..	***..***	***..***	***..***	60	60	65	***..***	***..***	***..***
	41.602	..	..	..	***..***	***..***	***..***	55	55	55	***..***	***..***	***..***
	41.656	60	60	65	***55***	***55***	***55***	..	..	..	***60***	***60***	***65***
	45.718	50	50	55	***60***	***60***	***65***	60	60	65	***50***	***50***	***55***
HELENSBURGH	46.384												
	46.549	..	..	..	***..***	***..***	***..***	50	50	55	***60***	***60***	***60***
	46.571	60	60	60	***50***	***50***	***55***	..	..	..	***..***	***..***	***..***
Metropolitan Coll. Jct	48.947												
	49.977	55	55	60	***60***	***60***	***60***	60	60	60	***55***	***55***	***60***
	50.578	60	80	85	***55***	***55***	***60***	55	55	60	***60***	***80***	***85***
	51.832	..	..	..	***60***	***80***	***85***	60	80	85	***50***	***50***	***55***
	51.886	50	50	55	***..***	***..***	***..***	…	..	..	***..***	***..***	***..***
	52.520	..	..	..	***50***	***50***	***55***	..	..	..	***..***	***..***	***..***
OTFORD	52.639												
	52.932	60	60	65	***55***	***55***	***55***	..	..	..	***..***	***..***	***..***
	52.967	..	..	..	***..***	***..***	***..***	50	50	55	***60***	***60***	***65***
	54.197	60	70	70	***..***	***..***	***..***	..	..	..	***60***	***70***	***70***
	54.199	..	..	..	***60***	***60***	***65***	60	60	65	***..***	***..***	***..***
	55.426	60	60	60	***60***	***70***	***70***	60	70	70	***60***	***60***	***60***
STANWELL PARK	55.950												
Stanwell Park Viaduct	56.725	40	60	60	***60***	***60***	***60***	60	60	60	***40***	***60***	***60***
Stanwell Park Viaduct	56.877	60	60	60	***40***	***60***	***60***	40	60	60	***60***	***60***	***60***
	58.508	60	70	75	***60***	***60***	***60***	60	60	60	***60***	***75***	***80***
	58.870	50	70	75	***..***	***..***	***..***	..	..	..	***50***	***75***	***80***
COALCLIFF	59.273												
	59.829	X40	*358 Points*		***..***	***..***	***..***	..	..	..	***..***	***..***	***..***
	59.870	..	..	..	***60***	***70***	***75***	..	..	..	***..***	***..***	***..***
	59.919	..	..	..	..	..	..	60	75	80	***..***	***..***	***..***
	59.948	^50	^50	^50	^Single line section common board			..	..	..	***^50***	***^50***	***^50***
	60.310	^Single line section common board			***^50***	***^50***	***^50***	^50	^50	^50	***..***	***..***	***..***
	60.338	^50	^70	^70	***..***	***..***	***..***	^Single line section common board			***^50***	***^70***	***^70***
	61.337	^Single line section common board			***^50***	***^80***	***^80***	^50	^80	^80	***..***	***..***	***..***
	61.360	^50	^50	^50	***..***	***..***	***..***	^Single line section common board			***^50***	***^50***	***^50***
	61.797	X50	*351 Points*		***..***	***..***	***..***	..	..	..	***..***	***..***	***..***
	61.868	..	..	..	***50***	***50***	***50***	..	..	..	***..***	***..***	***..***
	61.898	75	75	80	***..***	***..***	***..***	..	..	..	..	..	..
	61.898	..	..	..	**X50**	***351 Points***		..	..	..	..	..	..
	61.916	..	..	..	***..***	***..***	***..***	50	50	50	***75***	***75***	***80***
SCARBOROUGH	62.529												
	62.690	..	..	..	***50***	***70***	***70***	65	70	70	***..***	***..***	***..***
	63.805	65	65	70	***..***	***..***	***..***	..	..	..	***65***	***65***	***70***
	63.806	..	..	..	***65***	***75***	***80***	65	75	80	***..***	***..***	***..***
WOMBARRA	64.335												
	65.735	70	80	85	***65***	***65***	***70***	65	65	70	***70***	***95***	***100***
COLEDALE	66.233												
	67.109	70	70	75	***..***	***..***	***..***	..	..	..	***70***	***70***	***75***
	67.176	..	..	..	***70***	***80***	***85***	70	95	100	***..***	***..***	***..***

		DOWN MAIN						UP MAIN					
	67.496	100	115	115	***70***	***70***	***75***	70	70	75	***100***	***115***	***115***
	68.366	60	85	85	***..***	***..***	***..***	..	..	..	..	..	..
AUSTINMER	68.585												
	68.706	100	115	115	***..***	***..***	***..***	..	..	..	..	..	..
	68.985	..	..	..	***100***	***115***	***115***	..	..	..	..	..	..
	69.283	..	..	..	***50***	***90***	***100***	..	..	..	..	..	..
THIRROUL	70.237												

Thirroul to TfNSW Boundary (Unanderra – Moss Vale Line)

		DOWN MAIN						UP MAIN					
	KILO-	▼ DOWN SIGNS▼			▲ UP SIGNS▲			▲ UP SIGNS▲			▼ DOWN SIGNS▼		
LOCATION	**METRAGE**	**GENERAL**	**MEDIUM**	**HIGH**	**GENERAL**	**MEDIUM**	**HIGH**	**GENERAL**	**MEDIUM**	**HIGH**	**GENERAL**	**MEDIUM**	**HIGH**
	70.359	70	70	75	***..***	***..***	***..***	..	..	..	***70***	***70***	***75***
	70.625	..	..	..	***100***	***115***	***115***	100	100	100	***..***	***..***	***..***
	70.982	80	80	80	***70***	***70***	***75***	60	70	75	***80***	***80***	***80***
	71.630	..	..	..	***80***	***80***	***90***	80	80	90	***..***	***..***	***..***
BULLI	72.151												
	72.421	80	80	80	***80***	***80***	***80***	80	80	80	***80***	***80***	***80***
	73.076	75	75	85	***60***	***85***	***90***	60	85	85	***75***	***75***	***85***
	73.610	85	100	100	***75***	***75***	***85***	75	75	85	***95***	***100***	***100***
	73.899	..	..	..	..	..	..	90	90	90	***..***	***..***	***..***
WOONONA	73.993												
	75.472	85	90	95	***85***	***100***	***100***	..	..	..	***..***	***..***	***..***
BELLAMBI	75.547												
	75.630	90	95	95	***85***	***90***	***95***	..	..	..	***..***	***..***	***..***
	76.859	..	..	..	***..***	***..***	***..***	..	..	..	***90***	***100***	***100***
CORRIMAL	76.989												
	77.378	..	..	..	***90***	***100***	***100***	95	100	100	***..***	***..***	***..***
TOWRADGI	78.021												
	78.184	90	90	90	***..***	***..***	***..***	..	..	..	***90***	***90***	***90***
	78.452	..	..	..	***90***	***95***	***95***	95	95	95	***..***	***..***	***..***
	78.720	..	..	..	***80***	***95***	***95***	80	95	95	***..***	***..***	***..***
FAIRYMEADOW	79.358												
NORTH WOLLONGONG	81.320												
	81.438	75	90	90	***..***	***..***	***..***	..	..	..	***75***	***90***	***90***
	82.490	60	90	90	***..***	***..***	***..***	..	..	..	***60***	***90***	***90***
	82.782	..	..	..	***..***	***..***	***..***	95	95	95	***..***	***..***	***..***
	82.784	..	..	..	***95***	***95***	***95***	..	..	..	***..***	***..***	***..***
WOLLONGONG CITY	82.919												
	83.446	..	..	..	***70***	***90***	***90***	70	90	90	***..***	***..***	***..***
	83.801	..	..	..	***60***	***90***	***90***	60	90	90	***60***	***65***	***70***
CONISTON	84.097												
	84.190	X25	*206 Points*										
	84.190										***X25***	***205 Points***	
	84.200	60	65	65				..	..	..	..	..	..
	84.298	X25	*204 Points*				..	..	..	..	..	..	
	84.368	..	..	..	..	..	..	50	65	65	..	..	..
	84.382	..	..	..	..	..	..	X25	*204 Points*		..	..	..
	84.382	..	..	..	..	..	..	..	..	..	***X25***	*203 Points*	
	84.431	..	..	..	..	..	..	X25	*203 Points*				
	84.488	50	65	65	..	..	..	..	..	..			
	85.199	..	..	..	..	..	..	65	65	65			
	85.199	X50	*1101 Points*				..	..	..				
	85.333	..	..	..	..	..	..	..	..	..	***X50***	***1103 Points***	
	85.335	..	..	..	..	..	..	X50	*1101 Points*		..	..	..
	85.435	..	..	..	***X50***	***1103 Points***		..	..	..	..	..	..
	85.478	100	100	100	..	..	..	..	..	..	***100***	***100***	***100***
Unanderra North Jct	86.541												

		DOWN MAIN						UP MAIN					
	87.727	..	..	..	***100***	***100***	***100***	100	100	100	..	..	..
	87.727				..	..	..	..	..	..	***X50***	***1105 Points***	
	87.850	X50	*1106 Points*		..	..	..	..	..	..	..	..	..
	87.850	..	..	..	***X50***	***1105 Points***		..	..	..	..	..	..
UNANDERRA	88.273	..	…	..	..	..	..	..	..	..	..	..	..
	88.390	..	..	..	***80***	***85***	***90***	..	..	..	..	..	..
	88.403	..	..	..	..	..	..	80	..	90	..	..	..
	88.845	..	..	..	..	..	..	..	..	..	***60***	***..***	***60***
	88.853	60	..	60	..	..	..	..	..	..	***..***	***..***	***..***
	90.920	..	..	..	..	..	..	..	..	..	***40***	***..***	***40***
	90.928	40	..	40	..	..	..	..	..	..	..	..	..
	90.997	..	..	..	***50***	***..***	***60***	50	..	60	..	..	..
TfNSW BOUNDARY	91.080												

Unanderra to Bomaderry

KILO	DOWN			UP			KILO	DOWN			UP		
METRAGE	GENERAL	MEDIUM	HIGH	GENERAL	MEDIUM	HIGH	METRAGE	GENERAL	MEDIUM	HIGH	GENERAL	MEDIUM	HIGH
87.924	..	..	..	X50	*1106 Points*		**114.758**	75	75	80	..	..	..
87.924	50	50	50				**114.806**	..	..	..	75	90	95
88.273	**UNANDERRA**						**116.166**	50	50	60	..	..	..
88.661	100	100	100	..	..	..	**116.209**	..	..	..	75	75	80
88.743	X50	*1115 Points*		..	..	..	**116.816**	60	80	85	50	50	60
88.870	..	..	..	X50	*1115 Points*		**117.160**	40	80	85	60	80	80
89.174	..	..	..	80	85	90	**117.292**	60	80	85	40	80	80
91.586	**KEMBLA GRANGE**						**117.551**	**BOMBO**					
93.151	85	100	100	..	..	..	**117.940**	..	..	..	60	80	80
93.618	100	100	100	..	..	..	**117.985**	60	60	60	..	..	..
94.500	..	..	..	100	100	100	**118.946**	25	25	25	..	..	..
95.047	**DAPTO**						**118.955**	..	..	..	60	60	60
							119.160	**KIAMA**					
95.300	..	..	..	90	100	100							
95.862	80	80	80	..	..	..	**119.430**	..	..	..	25	..	25
96.813	..	..	..	100	100	100	**119.473**	100	..	100	..	..	..
96.873	100	115	140	..	..	..	**123.210**	45	..	45	75	..	95
97.847	..	..	..	80	80	80	**123.800**	..	..	..	45	..	45
101.804	80	100	100	..	..	..	**123.814**	60	..	60	..	..	..
102.203	90	100	100	..	..	..	**124.360**	100	..	100	60	..	60
102.857	90	90	100	..	..	..	**125.696**	90	..	90	..	..	..
102.932	..	..	..	100	115	140	**126.434**	..	..	..	100	..	100
103.341	**ALBION PARK**						**126.457**	100	..	125			
							127.221	..	..	..	90	..	90
103.746	100	100	100	..	..	..	**128.560**	**GERRINGONG**					
103.755	..	..	..	40	40	40	**129.171**	100	..	100	100	..	125
105.194	100	100	110	..	..	..	**131.620**	100	..	140	..	..	..
105.522	**OAK FLATS**						**131.997**	..	..	..	100	..	100
							134.877	100	..	100	100	..	140
106.085	..	..	..	100	100	100	**139.063**	80	..	80	100	..	100
107.930	..	..	..	100	100	110	**139.473**	..	..	..	80	..	80
107.940	80	80	85	..	..	..	**140.629**	..	..	..	90	..	90
108.750	X60	*51A Points*		..	..	..	**140.760**	@40					
108.790	..	..	..	80	80	85	**140.844**	**BERRY**					
108.832	100	100	100	..	..	..	**141.200**				@50		
108.887	**SHELLHARBOUR JUNCTION**						**141.250**	90	..	95	..	..	..
108.890	60	60	60		On Loop		**141.720**	..	..	..	@50	..	80
108.890		On Loop		X60	*51B Points*		**142.272**	100	..	100	90	..	95
110.657	**DUNMORE (NOT IN SERVICE)**						**145.886**	90	..	90	100	..	100
110.860		On Loop		60	60	60	**146.436**	100	..	100	90	..	90
110.950		*52B Pints*		X35	..	..	**150.540**	100	..	140	..	..	..
111.668	80	80	80	..	..	..	**151.000**	..	..	..	100	..	100
112.078	..	..	..	100	100	100	**152.290**	80	..	80	..	..	..
112.270	75	75	80	..	..	..	**153.169**	50	..	50	100	..	140
112.776	75	90	95	..	..	..	**153.348**	**BOMADERRY**					
113.040	..	..	..	75	75	75							
113.372	**MINNAMURRA**												

@ Level crossing sign NGE216

Coniston to Port Kembla

KILO	DOWN			UP		
METRAGE	GENERAL	MEDIUM	HIGH	GENERAL	MEDIUM	HIGH
84.097	**CONISTON**					
84.190	X25	*206 Points*		..	..	..
84.190	X25	*205 Points*		*Down Sign Up Main*		
84.200	60	65	65	*On Main Line*		
84.298	X25	*204 Points*		..	..	..
84.382	..	..	..	*X25*	*204 Points*	
84.382	X25	*203 Points*		*Down Sign Up Main*		
85.045	45	75	75	55	65	65
86.267	**LYSAGHTS**					
86.385	55	80	80	..	..	..
86.386	..	..	..	X45	*197 Points*	

KILO	DOWN			UP		
METRAGE	GENERAL	MEDIUM	HIGH	GENERAL	MEDIUM	HIGH
86.422	X45	*195A Points*		*Down Sign Up Main*		
86.543	*Up Sign Down Main*			X45	*195B Points*	
87.238	..	..	..	55	75	75
87.650	**CRINGILA**					
88.280	55	60	60	..	..	..
88.583	..	..	..	45	65	65
88.667	..	..	..	X30	*186 Points*	
88.771	**PORT KEMBLA NORTH**					
89.697	..	..	..	45	60	60
89.950	25	25	25	..	..	..
90.015	..	..	..	25	25	25
90.239	**PORT KEMBLA**					

Unanderra North Junction to Inner Harbour (via Flyover)

	DOWN SOUTH FORK						UP SOUTH FORK					
KILO-	▼ DOWN SIGNS▼			▲ UP SIGNS▲			▲ UP SIGNS▲			▼ DOWN SIGNS▼		
METRAGE	GENERAL	MEDIUM	HIGH	GENERAL	MEDIUM	HIGH	GENERAL	MEDIUM	HIGH	GENERAL	MEDIUM	HIGH
85.133	100	..	..	40	..	..	40	..	..	**100**	..	
85.318				***X25***	***1102 Points***							

Unanderra North Junction to Lysaghts

KILO	DOWN			UP		
METRAGE	GENERAL	MEDIUM	HIGH	GENERAL	MEDIUM	HIGH
#85.318	*# Illawarra Line Km*			X25	*1102 Points*	
+84.843	X25	*1102 Points*		*+ Triangle Loop Line*		
+84.840	50	..	..	*+ Triangle Loop Line*		
+84.860	*+ Triangle Loop Line*			30	..	..
+86.282	*+ Triangle Loop Line*			50	..	
+86.321	X45	*197 Points*		*+ Triangle Loop Line*		
86.386	*Port Kembla Line*			X45	*197 Points*	

+ Kilometrage measured back from Port Kembla Line

Coniston to Inner Harbour

KILO	DOWN			UP		
METRAGE	GENERAL	MEDIUM	HIGH	GENERAL	MEDIUM	HIGH
84.097	**CONISTON**					
84.190	*#X25*	*206 Points*		*# On Main Line*		
84.190	*X25*	*205 Points*		*Down Sign Up Main*		
84.296	*Up Sign Up Fork*			*X25*	*206 Points*	
84.296	*Up Sign Down Fork*			*X25*	*205 Points*	

Station data

Station	Kilo – metrage	Signal Box Status	Hours of Signal Box	Facilities
Waterfall	38.627	A	Always	P,WC
Helensburgh	46.384	C	Controlled from Wollongong Signal Box	P,LP
Metropolitan Coll Jct	48.947	C	Controlled from Wollongong Signal Box	L
Metropolitan Colliery	*50.221	C	* On Branch	PS
Otford	52.639	C	Controlled from Wollongong Signal Box	P,LP
Stanwell Park	55.950			P
Coalcliff	59.273	C	Controlled from Wollongong Signal Box	P,LP
Scarborough	62.529	C	Controlled from Wollongong Signal Box	P,LP
Wombarra	64.335			P
Coledale	66.233			P
Austinmer	68.585	C	Controlled from Wollongong Signal Box	P
Thirroul	70.237	C	Controlled from Wollongong Signal Box	P,LP
Bulli	72.151	C	Controlled from Wollongong Signal Box	P
Woonona	73.993			P
Bellambi	75.547			P
Corrimal	76.989	C	Controlled from Wollongong Signal Box	P
Towradgi	78.021			P
Fairy Meadow	79.358			P
North Wollongong	81.320			P
Wollongong	82.919	C	Controlled from Wollongong Signal Box	P
Wollongong Sig Box	83.250	A	Always	
Coniston	84.097	C	Controlled from Wollongong Signal Box	P,LP
Unanderra Nth Jct	86.541	C	Controlled from Wollongong Signal Box	L
Unanderra	88.273	C	Controlled from Wollongong Signal Box	P,LP
Kembla Grange	91.586			P
Tubemakers Siding				PS
Dapto	95.047	C	Controlled from Wollongong Signal Box	P,LP
Albion Park	103.341	C	Controlled from Wollongong Signal Box	P
Oak Flats	105.522			P
Shellharbour Jct	108.887			P
Dunmore (not in service)	110.657	C	Controlled from Wollongong Signal Box	P
Quarry Siding	*112.060		* On Branch	PS
Minnamurra	113.372			P
Bombo Quarry Siding	*117.212		* On Branch	PS
Bombo	117.551	C	Controlled from Wollongong Signal Box	P
Kiama	119.160	P	Controlled from Wollongong Signal Box	P,TT
Gerringong	128.560			P
Berry	140.844	P	Monday to Friday: 0430 – 2000 Saturday, Sunday, and Public Holidays: 0510 – 2105	P
Bomaderry	153.348	A	Always	P,TT
Mill Siding	*155.913		* On Branch	PS
Port Kembla Branch				
Allans Creek	86.267	C	Controlled from Wollongong Signal Box	L
Cringila	87.650	C	Controlled from Wollongong Signal Box	P
Port Kembla North	88.771	C	Controlled from Wollongong Signal Box	P
Port Kembla	90.239	C	Controlled from Wollongong Signal Box	P
Inner Harbour Branch				
Inner Harbour	84.488	C	Controlled from Wollongong Signal Box	G, L

Emergency working or diversion of container trains Tempe – Unanderra (en route to and from Moss Vale)

The operation of container trains, on the UP and DOWN tracks between Unanderra and Tempe, (en route to and from Moss Vale), shall comply with the following special working conditions.

These conditions shall apply to all container trains because of the potential for any vehicle in the consist to be loaded to the maximum allowable height above rail of 4050 mm, as published in the *TOC manual General Instructions, Section 5 Loading Restrictions* covering vehicles subject to Note R10.

As the UP and DOWN tracks between Tempe and Unanderra are presently only authorised for container traffic operating to a maximum height of 3916 mm above rail, all trains conveying container traffic shall operate as an out of gauge train. Note that this gauge infringement is in height only and does not affect passing traffic.

Therefore, the following operating conditions shall apply:

- A maximum speed limit of **15 km/h** is imposed on all tunnels between Unanderra and Tempe.
- The speed limit shall apply for the full length of the train (excluding locomotives).
- Train to run to the fastest schedule applicable to the class of rolling stock (for example Schedule A1 for A class rolling stock) shown in *DOWN – sectional running times and full sectional loads* (page 52) *UP – sectional running times and full sectional loads* (page 54).

Note: The 15 km/h tunnel speed restriction has been accounted for in the A1 schedule (UP and DOWN) on the Illawarra

Train Control is to ensure that crews operating the relevant container trains on this route are aware of the above conditions of operation.

Loads and conditions between Unanderra and 91.080 km (Unanderra – Moss Vale line)

Version August 2021

DOWN loads

			LOAD - TONNES				TRAIN DATA		
	SECTIONS	LOCOMOTIVE CLASS = L	SINGLE	DOUBLE	TRIPLE	QUAD	VEHICLE CLASS	SECT RUN TIMES	NOTES
1	UNANDERRA – (#91.080 km)	AC6	1130	2260	3390	- -	ABCDEF	%	
2	UNANDERRA – (#91.080 km)	AC6 + L2	- -	1750	- -	- -	ABCDEF	%	b
3	UNANDERRA – (#91.080 km)	AC6 + 2 x L2	- -	- -	2529	- -	ABCDEF	%	b
4	UNANDERRA – (#91.080 km)	2 x AC6 + L2	- -	- -	2727	- -	ABCDEF	%	b
5	UNANDERRA – (#91.080 km)	L3/L4	500	1000	1500	- -	ABCDEF	%	1
6	UNANDERRA – (#91.080 km)	L2	900	1800	2700	3600	ABCDEF	%	
7	UNANDERRA – (#91.080 km)	L3/L4	750	1500	2250	3000	ABCDEF	%	
8	UNANDERRA – (#91.080 km)	L5	690	1380	2070	2760	ABCDEF	%	
9	UNANDERRA – (#91.080 km)	L6	551	1102	1653	2204	ABCDEF	%	
10	UNANDERRA – (#91.080 km)	L7	543	1086	1629	2172	ABCDEF	%	
11	UNANDERRA – (#91.080 km)	L8	517	1034	1551	2068	ABCDEF	%	
12	UNANDERRA – (#91.080 km)	L9	485	970	1455	1940	ABCDEF	%	

			LOAD - TONNES				TRAIN DATA	
13	UNANDERRA – (#91.080 km)	L10	430	860	1290	1720	ABCDEF	%
14	UNANDERRA – (#91.080 km)	L11	388	776	1164	1552	ABCDEF	%
15	UNANDERRA – (#91.080 km)	L12	362	724	1086	1448	ABCDEF	%

1. Empty wheat / coal vehicles. ARTC Unanderra to Dombarton running times (19 minutes) to apply.
91.080 km TfNSW/ARTC boundary.
% ARTC Unanderra to Dombarton running times (26 minutes) to apply.
b The AC6 locomotive shall be a C44ACi or GT46C-ACe type AC locomotive and the L2 locomotive can be NR or AN class. A full listing of approved AC6 locomotives (United Group Ltd – C44ACi, Downer EDI Rail – GT46C-ACe and CRRC Ziyang – SDA1) is summarised under Table 8 Approved locomotives grouped into load categories – locomotive type AC in TS TOC 1.

DOWN - sectional running times and full sectional loads

	#SECTIONAL RUNNING TIMES							FULL SECTIONAL LOADS LOCOMOTIVE CATEGORIES = L													GRADE
	1	2	3	4	5	6	Loco	AC6	2	3	4	5	6	7	8	9	10	11	12	13	14	
UNANDERRA	↛	↛	↛	↛	↛	↛	↛	↛	↛	↛	↛	↛	↛	↛	↛	↛	↛	↛	↛	↛		↛
ARTC boundary (91.080 km)	%	%	%	%	%	%	%	1133	903	791	745	696	551	543	517	442	430	388	362	253		1:30

% ARTC Unanderra to Dombarton running times (26 minutes for trains and 17 minutes for locomotive movements) to apply.

UP loads

			LOAD - TONNES				TRAIN DATA		
	SECTIONS	LOCOMOTIVE CLASS = L	SINGLE	DOUBLE	TRIPLE	QUAD	VEHICLE CLASS	SECT RUN TIMES	NOTES
1	(#91.080 km) - UNANDERRA	AC6	2400	- -	- -	- -	ABCDEF	%	1, 4
2	(#91.080 km) - UNANDERRA	AC6	- -	3600	- -	- -	ABCDEF	%	2, 4
3	(#91.080 km) – UNANDERRA	AC6 + L2	- -	2400	- -	- -	ABCDEF	%	1, 4, b
4	(#91.080 km) – UNANDERRA	AC6 + L2	- -	3600	- -	- -	ABCDEF	%	2, 4, b
5	(#91.080 km) – UNANDERRA	AC6 + 2 x L2	- -	- -	2400	- -	ABCDEF	%	1, 4, b
6	(#91.080 km) – UNANDERRA	AC6 + 2 x L2	- -	- -	3600	- -	ABCDEF	%	2, 4, b
7	(#91.080 km) – UNANDERRA	2 x AC6 + L2	- -	- -	2400	- -	ABCDEF	%	1, 4, b
8	(#91.080 km) – UNANDERRA	2 x AC6 + L2	- -	- -	3600	- -	ABCDEF	%	2, 4, b
9	(#91.080 km) – UNANDERRA	L2	- -	3600	- -	- -	ABCDEF	%	2, 4
10	(#91.080 km) - UNANDERRA	L2	2080	2400	- -	- -	ABCDEF	%	1, 4
11	(#91.080 km) - UNANDERRA	L2/L3/L4	- -	3300	- -	- -	ABCDEF	%	2, 4
12	(#91.080 km) - UNANDERRA	AC6 + L3/L4	- -	3300	- -	- -	ABCDEF	%	2, 4, b
13	(#91.080 km) - UNANDERRA	L4+L5/L6/L7/L8/L9	- -	3300	- -	- -	ABCDEF	%	2, 4, c
14	(#91.080 km) – UNANDERRA	L3/L4	1840	2400	- -	- -	ABCDEF	%	1, 4
15	(#91.080 km) – UNANDERRA	L5	1872	2400	- -	- -	ABCDEF	%	1, 4
16	(#91.080 km) – UNANDERRA	L6	1651	2400	- -	- -	ABCDEF	%	1, 4
17	(#91.080 km) – UNANDERRA	L7	1610	2400	- -	- -	ABCDEF	%	1, 4
18	(#91.080 km) – UNANDERRA	L8	1563	2400	- -	- -	ABCDEF	%	1, 4
19	(#91.080 km) – UNANDERRA	L9/L10	1200	2400	- -	- -	ABCDEF	%	1, 4
20	(#91.080 km) – UNANDERRA	L11	1191	2382	2400	- -	ABCDEF	%	1, 4
21	(#91.080 km) – UNANDERRA	L12	1112	2224	2400	- -	ABCDEF	%	1, 4
22	(#91.080 km) - UNANDERRA	L13	500	1000	1500	2000	ABCDEF	%	4

Note – published loads may be further restricted with the notes 1 to 4 associated with braking, see UP – 91.080 km to Unanderra – Explanatory notes (page 64)
% ARTC Unanderra to Dombarton running times (22 minutes) to apply
# 91.080 km TfNSW/ARTC boundary.
b The AC6 locomotive shall be a C44ACi or GT46C-ACe type AC locomotive and the L2 locomotive can be NR or AN class. A full listing of approved AC6 locomotives (United Group Ltd – C44ACi, Downer EDI Rail – GT46C-ACe and CRRC Ziyang – SDA1) is summarised under Table 8 Approved locomotives grouped into load categories – locomotive type AC in TS TOC 1.
c Not all L5/L6/L7/L8/L9 locomotive types are fitted with extended range dynamic brake that can satisfy the requirements on page 8 and quality as a 2 pipe train operating in excess of 2400 t.

UP - sectional running times and full sectional loads

The section between ARTC boundary (91.080km) and Unanderra is downgrade.

Note: The ruling grade between Moss Vale and Unanderra is 1:75

The ARTC sectional running times between Dombarton and Unanderra is to be used.

Note: The running time between Dombarton and Unanderra (ARTC) is 22 minutes

Locomotives attached to the train for balancing purposes (for example excess to haulage requirements) that are dead attached, not fitted with dynamic brake or do not have operating dynamic brake are to be included in the trailing load of the train.

Further loading restrictions applicable to single pipe trains, two pipe trains and ECP braking trains are explained in Note 1, Note 2 and Note 3 respectively under ***UP – 91.080 km to Unanderra – Explanatory notes***. This may result in loads smaller than the ARTC approved full sectional loads for the ruling grade.

UP – 91.080 km to Unanderra – Explanatory notes

Note 1 – Single pipe trains:

On steeply falling grades between 91.080 km and Unanderra, loads for single pipe trains are limited due to air brake capacity to a **maximum load of 2400 tonnes and up to 1000 metres long**.

For trains over 2400 tonnes and above 1000 metres long see section **Operation of Single Pipe Trains in Excess of 2400 tonnes and up to 1500 metres long from Summit Tank to Unanderra** on page 65.

There should be at least one dynamic brake locomotive per 1200t trailing load.

Note 2 – Two pipe trains:

Two pipe vehicles have a main reservoir that recharges the air brake system. These vehicles listed in the General Instruction Pages, **Section 10 Locomotive and Rolling Stock Data** and are identified by •• in the Brake Type column.

The maximum train length of two pipe vehicles on a train is 46 vehicles. Up to 6 empty or loaded single pipe vehicles may be attached to the **REAR** of a loaded or empty two pipe train. The two pipe portion shall not exceed 40 wagons.

There should be at least one dynamic brake locomotive per 2500t trailing load or part thereof.

Note 4 – Pressure maintaining brake valves:

Lead locomotives on freight trains operating from 91.080 km to Unanderra shall have pressure maintaining brake valves (26L brake equipment or equivalent). Refer to TS TOC 1 Section 2.14 for further information.

Conditions of operation of freight trains - Unanderra and 91.080 km (en route to and from Moss Vale)

Braking requirements – DOWN direction:

- No special conditions.

Braking requirements – UP direction:

- All wagons (except for ECP wagons) shall be fitted with fixed exhaust chokes.
- Any wagon fitted with grade control valves are not permitted to operate.
- Dynamic brake shall be used if available and operational.
- The train shall apply dynamic braking of no more than 920kN (up to 4 in DC locomotive consists) and no more than 690kN (up to 3 in AC locomotive consists) in total from the ARTC/TfNSW boundary to Unanderra. For mixed AC/DC locomotive consists use the lower figure.

- The minimum allowable axle load for vehicles in front third of the train shall not be less than 10 tonnes for dynamic braked trains.

Additional braking requirements for 2 pipe trains – UP direction:

Locomotives programmed to work as a 2 pipe trains in excess of 2400t shall be fitted with extended range dynamic brake.

In the event of a dynamic brake failure, there shall be at least 50% of active locomotives in the consist with operable dynamic brake that can be controlled from the lead unit.

Note: The train may continue under the control of the remaining dynamic brake and supplemented by the air brake.

Note: The trains are not permitted (by ARTC network control) to proceed past Moss Vale towards Unanderra if the dynamic brake fails on more than 50% of active locomotives in a train consist with multiple unit locomotives.

If the driver has any trouble in adequately recharging the brake pipe as a result of the dynamic brake failure, the train shall be brought to a stand and held on with the locomotive independent brake and sufficient handbrake while the brake pipe fully recharges. If the driver again has trouble in adequately recharging the brake pipe later in the journey, the train shall be brought to a stand and secured by handbrakes. The train may be subsequently moved only by dividing the train or attaching additional locomotives with operable dynamic brake.

Operation of single pipe trains in excess of 2400 tonnes and up to 1500 metres long from Summit Tank to Unanderra

Single pipe trains between **2400 and 4000 tonnes and up to 1500 metres long** may operate from the **ARTC/TfNSW boundary** to Unanderra under mandatory dynamic brake conditions as follows:

- The minimum allowable axle load for vehicles in the front third of a train shall not be less than 10 tonnes.
- Maximum train length 1500 metres plus locomotives.
- Maximum train mass 4000t plus locomotives.
- There shall be no less than one locomotive provided for each 1000 tonnes or part thereof train load.
- All locomotives shall have operable extended range dynamic brake.
- The speed of the train shall be controlled by dynamic brake supplemented by use of air brake as required.
- The speed of the train shall not exceed 25 km/h.
- Crews shall have clear understanding of procedures for operating these trains in the event of loss of radio communication.

If the dynamic brake fails on one locomotive only after departing the ARTC/TfNSW boundary the train may continue under the control of the remaining dynamic brake and supplemented by the air brake.

- If the driver has any trouble in adequately recharging the brake pipe, the train shall be brought to a stand and held on the locomotive independent brake and sufficient handbrakes and the brake pipe fully recharged.
- The train may then continue under the control of the remaining dynamic brake and supplemented by the air brake.
- If the driver again has trouble in adequately recharging the brake pipe, the train shall be brought to a stand and secured by handbrakes.
- The train may be subsequently moved only by dividing the train or attaching additional locomotive/s with operable dynamic brake.

If the dynamic brake fails on more than one locomotive only after departing the ARTC/TfNSW boundary the train shall be brought to a stand and secured by hand brakes. The train may be subsequently moved only by dividing the train or attaching additional locomotive/s with operable dynamic brake.

- If the dynamic brake fails on more than one locomotive between Moss Vale and Summit Tank, the train must be divided at the first suitable location.
- If the train is required to be divided as above, each portion of the train shall comply with the single pipe train load and length limits as specified in Note 1 above.

Operation of Heritage passenger trains

Train loads for heritage passenger trains shall not exceed the tested/agreed load for each specific locomotive type.

The cutting out of brakes is not permitted.

The operator shall have driving procedures that specifically address the braking issues associated with the route (such as speed, heat input to wheels, brake fade, recharge of brake pipe following brake releases).

The operator shall have a procedure in place to manage the train and communicate with network control in the event of runaway.

Drivers shall be trained in those driving and communication procedures.

Train guards shall be trained to carry out duties such as securing and protecting the train in the event of a train failure.

Operating outside or beyond the prescribed operating conditions

The safety implications of not operating to the prescribed requirements and limits between Summit Tank and Unanderra in the UP direction are high. Any proposals to operate outside or beyond the existing operating conditions requires the submission of technical and risk analyses to both ARTC and TfNSW for determination.

Examples of operating outside or beyond the prescribed operating conditions include:

- operating beyond the maximum train load allowed
- operating beyond the train length or maximum number of wagons, or both permitted
- operating above the allowable maximum speed for single pipe trains
- axle load of vehicles in the front third of a train is lower than permitted
  Note: Refer to ONRSR's Safety Message: Unsafe loading of Coal Wagons
- application of dynamic brake above the specified limit

Under the Rail Safety National Law, it is the obligation of the rolling stock operator (RSO) to undertake change management and safety validation activities when deviating from existing operational parameters.

The operator shall, through technical and risk analyses, demonstrate that the proposed train operating outside or beyond the prescribed operating conditions by the RIM is safe in relations to:

- in-train forces: L/V ratio analyses (where applicable) to support all locomotive-wagon and wagon-wagon combinations (at different loading states) in the consist under dynamic or emergency brake application on the tightest curve to ensure it is not encroaching the derailment limit.
- train braking capacity: a review on train brake characteristics are fit for purpose for example: net brake ratio, choke timings, brake block coefficient of friction, tonnes per operative brakes.

Conditions for the operation of self-propelled diesel trains - Unanderra and 91.080 km (en route to and from Moss Vale)

Version August 2021

XPT	Xplorer, Endeavour	Conditions of Operation – Down Direction
√	- -	All power cars operating
- -	√	All engines operating
√	- -	Maximum 7 trailer cars with 2 power cars or 3 trailer cars with 1 power car powering and 1 power car disabled
√	√	All compressors operating
√	√	Emergency coupler available
√	√	No brake cut outs permitted
√	√	Electro-pneumatic (EP) brake, automatic brake, hand and all spring parking brakes fully operational

XPT	Xplorer, Endeavour	Conditions of Operation – UP Direction
√	- -	One or two power cars operating
√	- -	Single power car not permitted (train must consist of at least two vehicles, either two power cars or one power car and one trailer)
- -	√	All engines operating
- -	√	At least half of traction motors working. Single car not permitted.
√	- -	Maximum 7 trailer cars with 2 power cars or 3 trailer cars with 1 power car powering and 1 power car disabled
√	√	All compressors operating (compressor on any dead power car to be switched to hotel supply)
√	√	Emergency coupler available
√	√	No brake cut outs permitted
√	√	Electro-pneumatic (EP) brake, automatic brake, hand and all spring parking brakes fully operational

Section 16

Sydney Metropolitan Area pages

16. Sydney Metropolitan Area pages

Maximum speed of locomotives and rolling stock - Sydney Metropolitan Area

Version August 2021

			LOCOMOTIVES																FREIGHT VEHICLES Class						PASSENGER VEHICLES			
			^1	^2	^3	^4	^5	^6	^7	^8	^9	^10	^11	^12	^13													
SECTION	Class of Line	Notes	L, LQ, LZ, 31	Note O lists applicable locomotives	82, CLP, GL, NR	14, 81, ALF, AN, BL, CLF, G, VL	42, 80, 80s, B, DL	18	442, 442s, 700, GM12, S, X	Note Q lists applicable locomotives	43, 44s, 930	423	D, K, T, 32	47, 48, 48200, 48s, 49, 830, 900, GPU, MM, PL	73, (K)	46, 86	59, 32(P) Steam	Multi Loco Wkg (Hp limited to 16000hp)	A	B	C	D	E	F	XPT	Xplorer	Loco Hauled	Diesel Railcars
City Circle																												
Central-Quay-Central (Inner)	1	A,B,C,H	40	40	40	40	40	40	40	40	40	40	40	40	40	40	N/A	U	40	40	40	40	N/A	N/A	40	40	40	40
Central-Quay-Central (Outer)	1	A,B,H	40	40	40	40	40	40	40	40	40	40	40	40	40	40	N/A	U	40	40	40	40	N/A	N/A	40	40	40	40
Main Suburban/West																												
Sydney Terminal-Granville (Main)	1		100	100	100	100	100	90	100	100	100	80	100	100	70	100	80	U	100	100	80	65	80	65	100	100	100	100
Granville-St Marys (West Sub/Sub)	1		100	115	115	115	115	90	115	115	115	80	100	100	70	100	80	U	115	100	80	65	80	65	160	145	115	115
St Marys-Penrith (Main)	1		100	115	115	115	115	90	115	115	115	80	100	100	70	100	80	U	115	100	80	65	80	65	160	145	115	115
Central-Homebush (Suburban)	1	D	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	U	50	50	50	50	50	50	100	100	50	100
Homebush-Granville (Suburban)	1	D	80	80	80	80	80	80	80	100	100	80	100	100	70	80	N/A	U	100	100	80	65	80	65	100	100	100	100
Granville-St Marys (West Main/Main)	1		100	115	115	115	115	90	115	115	115	80	100	100	70	100	80	U	115	100	80	65	80	65	160	145	115	115
Central-Homebush (Local)	1	D,H	50	50	50	50	50	50	50	50	50	50	50	50	50	50	N/A	U	50	50	50	50	N/A	N/A	100	100	50	100
Clyde																												
Clyde-Parramatta Rd	2	H	50	50	50	50	50	50	50	50	50	50	50	50	50	50	N/A	U	50	50	50	50	N/A	N/A	60	60	50	60
Richmond																												
Blacktown-Richmond	1	H	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	U	50	50	50	50	N/A	N/A	115	115	50	115
Seven Hills-Blacktown (Down Bch)	1	H	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	U	70	70	70	70	N/A	N/A	70	70	70	70
Main North																												
Strathfield-Hornsby (Main)	1		100	115	115	115	115	90	115	115	115	80	100	100	70	100	80	U	115	100	80	65	80	65	115	115	115	115
Strathfield-North Strath Jct (Flyovers)	1	H	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	U	40	40	40	40	N/A	N/A	40	40	40	40
Nth Strath Jct-Rhodes (Down Relief)	1		80	80	80	80	80	80	80	80	80	80	80	80	70	80	80	U	80	80	80	65	80	65	80	80	80	80
West Ryde-Epping (Down Suburban)	1		90	90	90	90	90	90	90	90	90	80	90	90	70	90	80	U	90	90	80	65	80	65	90	90	90	90
Epping-West Ryde (Up Suburban)	1		90	90	90	90	90	90	90	90	90	80	90	90	70	90	80	U	90	90	80	65	80	65	90	90	90	90
Epping-Thornleigh (Down Relief)	1		75	75	75	75	75	75	75	75	75	75	75	75	70	75	75	U	75	75	75	65	75	65	90	90	75	75
Thornleigh-Pennant Hills (Up Relief)	1		50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	U	50	50	50	50	50	50	50	50	50	50
Normanhurst-Hornsby (Down Relief)	1		75	75	75	75	75	75	75	75	75	75	75	75	70	75	75	U	75	75	75	65	75	65	80	80	75	75
Rhodes-Nth Strath Jct (Up Relief / NSRU)	1		75	75	75	75	75	75	75	75	75	75	75	75	70	75	75	U	75	75	75	65	75	65	75	75	75	75
North Shore																												
Central-North Sydney	1	A,C,H	30	30	30	30	30	30	30	30	30	30	30	30	30	30	N/A	U	30	30	30	30	N/A	N/A	80	80	30	80
North Sydney-Hornsby	1	H, V	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30[V]	U	30	30	30	30	N/A	N/A	80	80	50	80

			LOCOMOTIVES																FREIGHT VEHICLES Class						PASSENGER VEHICLES			
			^1	^2	^3	^4	^5	^6	^7	^8	^9	^10	^11	^12	^13														
Main South																												
Lidcombe-Macarthur (via Regents Pk)	1		100	115	115	115	115	90	115	115	115	80	100	100	70	100	80	U	115	100	80	65	80	65	160	145	115	115
Granville-Cabramatta	1		100	100	100	100	100	90	100	100	100	80	100	100	70	100	80	U	100	100	80	65	80	65	100	100	100	100
Lidcombe Triangle Loop	1		35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	U	35	35	35	35	35	35	35	35	35	35
Granville Y-Link	1		75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	U	75	75	75	65	75	65	75	75	75	75
Illawarra																												
Central-Hurstville (Illawarra)	1	D	100	100	100	100	100	90	100	100	100	80	100	100	70	100	80	U	100	100	80	65	80	65	100	100	100	100
Hurstville-Waterfall (Main)	1		100	115	115	115	115	90	115	115	115	80	100	100	70	100	80	U	115	100	80	65	80	65	115	115	115	115
Central-Meeks Rd Jct (Illawarra Local)	1	D	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	U	50	50	50	50	N/A	65	100	100	50	100
Meeks Rd Jct-Hurstville (Illawarra Local)	1	D	100	100	100	100	100	90	100	100	100	80	100	100	70	100	80	U	100	100	80	65	N/A	65	100	100	100	100
Up Engine Dive Redfern-Acdep	1	H	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	U	10	10	10	10	N/A	N/A	10	10	10	10
Illawarra Dives Redfern-Illawarra Jct	1	I	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	U	30	30	30	30	N/A	N/A	30	30	30	30
Eastern Suburbs																												
Erskineville Junction-Martin Place	1	A,L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	40	40	40	40	N/A	U	N/A	N/A	N/A	N/A	N/A	N/A	40	40	N/A	N/A
Martin Place-Bondi Junction	1	A,L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15	15	15	15	N/A	U	N/A	N/A	N/A	N/A	N/A	N/A	15	15	N/A	N/A
Bankstown																												
Sydenham-Regents Park	1	G,H	50	50	50	50	50	50	50	50	50	50	50	50	50	50	N/A	U	50	50	50	50	N/A	N/A	80	80	50	60
Airport / East Hills																												
Central – Wolli Creek Junction	1	D, H	50	50	50	50	50	50	50	50	50	50	50	50	50	50	N/A	U	50	50	50	50	N/A	N/A	80	80	50	80
Wolli Creek Junction-Glenfield (main)	1	~~W~~, R, X	N/A	80	80	80	80	80	80	80	80	80	80	80	70	80	80[x]	U	80	80	80	65	N/A	N/A	125	125	80	60
Turrella-Revesby (local)	1	~~W~~, R	N/A	80	80	80	80	80	80	80	80	80	80	80	70	80	N/A	U	80	80	80	65	N/A	N/A	115	115	80	60
Leppington																												
Glenfield-Leppington	1	H, N	N/A	N/A	N/A	35	N/A	N/A	N/A	N/A	N/A	N/A	N/A	35	N/A	N/A	N/A	U	35	35	35	N/A	N/A	N/A	115	115	N/A	N/A
Cronulla																												
Sutherland-Cronulla	1	~~H~~, S	N/A	50	50	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	U	50	50	50	50	N/A	N/A	100	100	50	60
Freight Lines																												
North Strathfield-Flemington South Jct	1		50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	U	50	50	50	50	50	50	50	50	50	50
Flem Middle Junction-Flem West Jct	1		35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	U	35	35	35	35	35	35	50	50	35	35
Flem East Jct/Flem Middle Junction-Homebush Bay Loop (Olympic Park)	1	H	20	20	20	20	20	20	20	50	50	50	50	50	50	20	N/A	U	20	20	20	20	N/A	N/A	50	50	20	20
Lidcombe Goods Jct-ARTC Boundary	1		70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	U	70	70	70	65	70	65	70	70	60	60
ARTC Boundary-Sefton Park Sth Jct	1		80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	U	80	80	80	65	80	65	80	80	60	60
Chullora North Jct-Chullora West Jct	1	P	Refer to ARTC for operating conditions																									
Chullora West Jct-Pac. Nat. Depot	1	P	Refer to ARTC for operating conditions																									
Chullora NRC Jct-Industrial Siding	1	P, H	Refer to ARTC for operating conditions																									
Chullora Sth Jct - Wardell Rd West Jct	1	P	Refer to ARTC for operating conditions																									
ARTC Boundary-Meeks Rd Tempe Jct	1		40	40	40	40	40	40	40	40	40	40	40	40	40	N/A	10	U	40	40	40	40	40	40	40	40	40	40
Meeks Rd Syd'ham Jct-Meeks Rd Wst Jctn	1	I	25	25	25	25	25	25	25	25	25	25	25	25	25	N/A	10	U	25	25	25	25	N/A	N/A	25	25	25	25
Meeks Rd Sth Jct-Meeks Rd Nth Jct	1	I	25	25	25	25	25	25	25	25	25	25	25	25	25	N/A	10	U	25	25	25	25	N/A	N/A	25	25	25	25
Marrickville Junction-Cooks River	1	I, P	Refer to ARTC for operating conditions																									
Cooks River-10.410km Botany	1	I, P	Refer to ARTC for operating conditions																									

For note details, see notes on page 72, 'Notes for Maximum speed of locomotives and rolling stock - Sydney Metropolitan Area'.

Notes for *Maximum speed of locomotives and rolling stock - Sydney Metropolitan Area*

N/A Not allowed to run on this section under normal working conditions.

^ Numbered columns represent axle loadings. Column 1 heaviest to column 13 lightest.

A The maximum speed for all non-stopping trains, for all underground platforms, is 10 km/h in the tunnel before the platform and 15 km/h through the platform.

B The max speed for all locomotives in the Circular Quay area, outside of the platform, between the Harrington St and the Macquarie St portals is 25 km/h.

C Heavy axle loads and unscrubbed diesel locomotives (i.e. diesel locomotives not fitted with approved exhaust conditioners) are only approved for restricted operation in the city underground as follows :-

(a) Locomotives designated **in columns numbered 1 to 6 (Includes 86 class) above** and freight vehicles heavier than 76 tonnes gross are not permitted to run through platforms at: (1) Wynyard station, Up and Down Shore, and (2) Town Hall station, Up and Down Shore and City Inner except in an emergency and only when issued with a current TOC waiver covering each movement.

(b) Unscrubbed diesel locomotives are also permitted to operate in the city underground but only when issued with a current TOC waiver covering each movement.

D The following rolling stock is not allowed to run over the Flying Junctions between Redfern and Central in the Up direction:

Locomotives designated in columns numbered 1 to 6 above and freight vehicles heavier than 76 tonnes gross.

F Electric locomotives are allowed on the **UP NORTH FORK** between Meeks Road West Junction and Meeks Road Sydenham Junction **ONLY**.

G 81/82/NR class locomotives and E/F class freight vehicles allowed between Sefton Park North Junction and Sefton Park East Junction at a max speed of 25 km/h.

H Freight vehicles loaded greater than 20 tonnes axle load NOT PERMITTED, unless authorised by a **TOC Waiver**.

I Freight vehicles loaded greater than 23 tonnes axle load NOT PERMITTED, unless authorised by a **TOC Waiver**.

J Electrified between Rosehill & Electric train Stop sign located at location CC22+736 (Overhead Wire Structure).

K Only locomotives fitted with vigilance control system are approved to operate outside shunting yards.

L **Maximum load**

Freight trains shall not contain any freight vehicles with a **gross mass exceeding 73 tonnes.**

Operational requirements

Between Martin Place and Bondi Jct to conform to structure loading limits on the viaducts the following conditions shall be obeyed:

The only time that simultaneous movements are permitted on adjacent tracks over this section is when the freight trains are in the **empty** condition.

All trains when passing each other on the above section shall not exceed **a maximum speed of 15 km/h.**

N 81 Class and 48 Class locomotives only.

O 1100, 92, 93, 6000, 6020, ACC, C, CF, CM, CEY, CSR, FIE, GWA, GWU, LDP, LDP10, MRL, PHC, QBX, QL, RL, SCT, TT(134t), TT100 (134t), WH, XRN, SSR. **Note CSR/QBX locomotives not permitted on all lines, refer to TS TOC 1 section 10 for allowable routes/lines.**

P Refer to ARTC for operating conditions.

Q 1200, 22, 421, 422, 44, 45, 45s, 600, DC, EL, FL, GM1, HL

R Operation of freight vehicles over 18 tonne axle loads NOT PERMITTED, unless authorised by a TOC Waiver or operating under conditions detailed in this section, *East Hills Line – operation of freight vehicles with axle loads greater than 18 tonnes*, page 76.

S Operation of freight vehicles over 20 tonne axle loads NOT PERMITTED, unless authorised by a TOC Waiver or operating under conditions detailed in this section, *Cronulla Line – operation of 81, 82, BL, C, G, GL, RL, and VL locomotives*, page 78.

U Unlimited number of locomotives for multiple working of locomotives (subject to a maximum horsepower limit of 16000Hp per locomotive group).

V Limited to between Hornsby and Gordon only.

X 59, 32(P) class not permitted to traverse the East Hills Viaduct (between signal EH12 at 24.160 km and EH15.05 at 24.720 km). Traversing from Wolli Creek to Glenfield not permitted via the East Hills Line, only Wolli Creek to East Hills (up to signal EH12) or Glenfield to East Hills (up to signal EH15.05).

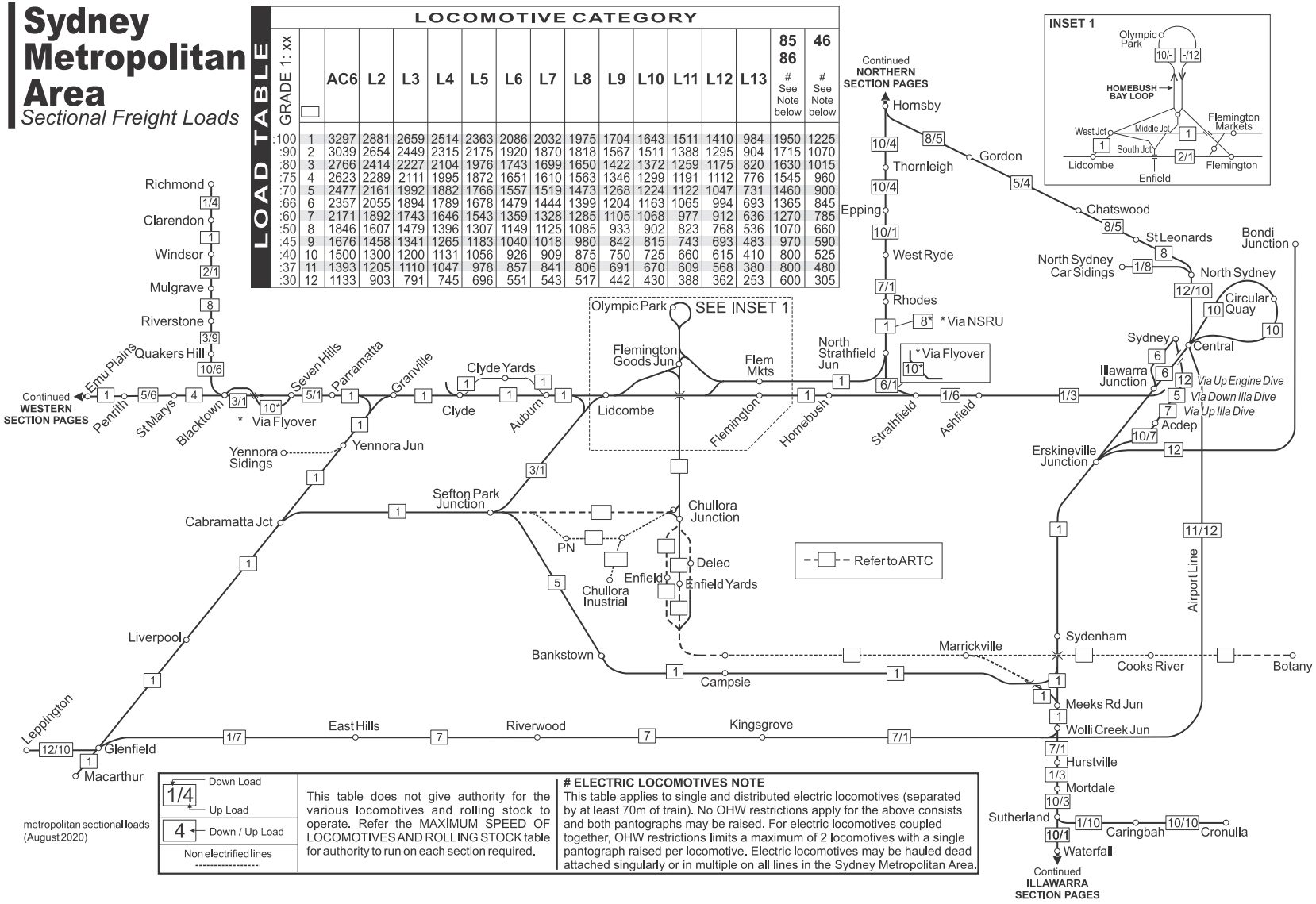
Sydney Metropolitan Area - sectional freight loads

Version August 2020

Sydney Metropolitan Area
Sectional Freight Loads

LOAD TABLE — GRADE 1: xx

		LOCOMOTIVE CATEGORY														
		AC6	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	85 86 # See Note below	46 # See Note below
:100	1	3297	2881	2659	2514	2363	2086	2032	1975	1704	1643	1511	1410	984	1950	1225
:90	2	3039	2654	2449	2315	2175	1920	1870	1818	1567	1511	1388	1295	904	1715	1070
:80	3	2766	2414	2227	2104	1976	1743	1699	1650	1422	1372	1259	1175	820	1630	1015
:75	4	2623	2289	2111	1995	1872	1651	1610	1563	1346	1299	1191	1112	776	1545	960
:70	5	2477	2161	1992	1882	1766	1557	1519	1473	1268	1224	1122	1047	731	1460	900
:66	6	2357	2055	1894	1789	1678	1479	1444	1399	1204	1163	1065	994	693	1365	845
:60	7	2171	1892	1743	1646	1543	1359	1328	1285	1105	1068	977	912	636	1270	785
:50	8	1846	1607	1479	1396	1307	1149	1125	1085	933	902	823	768	536	1070	660
:45	9	1676	1458	1341	1265	1183	1040	1018	980	842	815	743	693	483	970	590
:40	10	1500	1300	1200	1131	1056	926	909	875	750	725	660	615	410	800	525
:37	11	1393	1205	1110	1047	978	857	841	806	691	670	609	568	380	800	480
:30	12	1133	903	791	745	696	551	543	517	442	430	388	362	253	600	305



metropolitan sectional loads (August 2020)

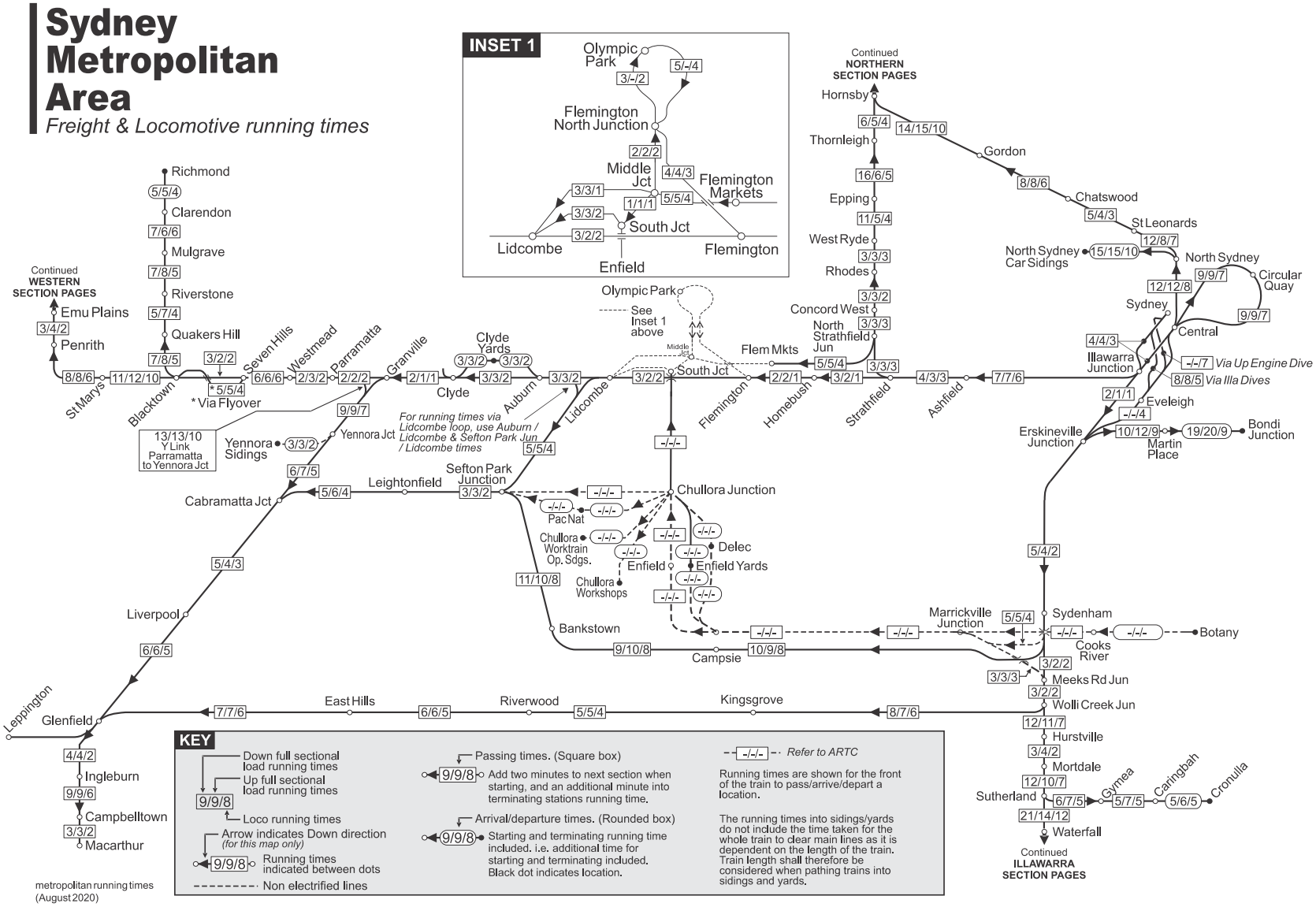
Down Load 1/4 Up Load
4 Down / Up Load
Non electrified lines

This table does not give authority for the various locomotives and rolling stock to operate. Refer the MAXIMUM SPEED OF LOCOMOTIVES AND ROLLING STOCK table for authority to run on each section required.

 # ELECTRIC LOCOMOTIVES NOTE
This table applies to single and distributed electric locomotives (separated by at least 70m of train). No OHW restrictions apply for the above consists and both pantographs may be raised. For electric locomotives coupled together, OHW restrictions limits a maximum of 2 locomotives with a single pantograph raised per locomotive. Electric locomotives may be hauled dead attached singularly or in multiple on all lines in the Sydney Metropolitan Area.

Sydney Metropolitan Area - freight and locomotive running times

Version August 2020



Hours of signal boxes

Version December 2014

	Signal Box / Complex	Hours of duty
	Sydney	Always
	Strathfield / Homebush	Always
Illawarra	Sydenham	Always
	Waterfall	Always
Southern	# Fairfield	Always
	Campbelltown	Always
Western	Auburn	Always
	Clyde	Always
	Parramatta Road	Always
	Granville	Always
	Blacktown	Always
	St Marys	Always
	Penrith	Always
Freight Lines	Enfield Control Centre	Refer ARTC network control centre south (Junee)

This location is manned by a qualified employee for station duties, which includes switching in for timetabled movements through the interlocking or to meet operational requirements as per requests from the Train Controller.

Dangerous goods in the Sydney Underground

Version December 2018

The following goods are totally banned from being carried by freight trains through the Sydney Underground lines (Central to North Sydney; City Inner and City Outer; Redfern to Bondi Junction; Central to Wolli Creek Junction):

CLASS 1	Explosives in any quantity that requires marking of freight containers
CLASS 2.1	Flammable gas in bulk tankers
CLASS 2.3	Poison gas in any quantity which requires marking of freight containers
CLASS 3	Flammable liquids in bulk tanks where the hazchem code includes the letter E (this includes petrol tankers returning unpurged)

Tonnage signals

Version 15.0 December 2012

Certain signals listed herein are treated as **Tonnage Signals**, that is to say, in order to avoid the risk of trains over a certain tonnage being brought to a stand at signals where it would be difficult for them to restart, these tonnage signals shall not be passed by trains conveying loads in excess of 75% of the prescribed load (i.e. 75% of Full Sectional Load) unless the Tonnage signal is in the clear position (or by telephone instructions in the case of failure).

The following signals are to be treated as a Tonnage signal, in accordance with Sydney Trains Network Rule *NSG 608 Passing signal at STOP*.

	Kilometrage	Signal number	Section located
North	17.880	WR1	Meadowbank – West Ryde
	22.308	EG21 – Down Suburban	Eastwood – Epping
	22.308	EG23 – Down Main	Eastwood – Epping
	23.745	EG45 – Down Main	Epping – Cheltenham
	23.759	EG43 – Down Suburban	Epping – Cheltenham
	32.051	HY13	Normanhurst – Hornsby
Illawarra	26.025	SD71 DI Down Home & Starting	Sutherland
	26.055	SD69 DR Down starting Refuge to Down Main	Sutherland
West	17.506	ST420M Up Home	Up Main Lidcombe
	17.506	ST422S Up Home	Up Suburban Lidcombe

Bondi Junction – trains / vehicles less than 4 cars using diamond crossover

Version 15.0 December 2012

Whenever a train or vehicle less than 4 cars in length has to traverse the diamond crossing at Bondi Junction, through points 907 in the reverse position it shall be block worked in accordance with Sydney trains Network Rule *NSY 512 Manual block working* between SY767 and SY783 or SY770 and ES6.48 signals.

Trains or vehicles shorter than 4 cars in length may not reliably operate the track circuits.

East Hills Line – operation of freight vehicles with axle loads greater than 18 tonnes

Version April 2020

Operation of freight vehicles over 18 tonne axle loads on the East Hills line is normally not permitted, and the note R restriction applies (as detailed in Notes for *Maximum speed of locomotives and rolling stock - Sydney Metropolitan Area* on page 72). However for the purposes of East Hills line maintenance (work trains) or when the Main South line is blocked or closed to traffic or when directed by RMC, freight vehicles over 18 tonne axle loads are permitted under special operating conditions. The following conditions shall apply:

1. Operation of freight vehicles is only permitted when the Main South lines are blocked or closed or when East Hills line maintenance is required (work trains) or when directed by RMC. Note H restriction shall not apply in this case.
2. Axle loads greater than 25 tonnes are not permitted.
3. The maximum speeds, as per *Location of speed signs* in this section, page 84, sub-section 13 and 13a, shall be strictly observed.
4. The maximum speeds associated with this operation shall be adhered to for the whole train length if any single hauled vehicle within the train consist is loaded above 72 tonnes gross mass or above 18 tonnes axle load for multipacks. This includes any dead attached or powering locomotives.
5. Operation onto the Airport line is not permitted, no operation of freight vehicles in the up direction past the 500A and 500B points on the up and down local lines.
6. Passing of freight trains between Revesby and Kingsgrove is not permitted (in effect single line working). The section for no passing is bound by Revesby Station and Kingsgrove Station with the following signals:
   Up Main
   From Signal RY22 (20.866 km) up to Signal M12.6 (12.735 km)
   Up Local
   From Signal RY20 (20.866 km) up to Signal L12.6 (12.735 km)
   Down Main
   From Signal SM441DM (13.408 km) up to Signal RY23D (21.067 km)
   Down Local
   From Signal SM437DL (12.735 km) up to Signal RY25 (21.067 km)
7. Passing of freight trains (with other freight or passenger trains) over East Hills viaduct is not permitted (in effect absolute single line working). The section for no passing is bound by signal EH12 (24.720km) up to signal EH15.05 (24.160km).
8. When travelling over the Glenfield flyover, all trains shall not move beyond signal GD20 (Up East Hills) or GD18 (Up Main South) until a full clear signal (GD20) or medium turnout signal (GD18) is shown.
9. The Network Maintainers Civil Maintenance Engineer (in charge of the East Hills Line) shall be notified of any freight vehicle operation on the East Hills line by the next working day.

Cronulla Line – operation of 81, 82, BL, C, G, GL, RL, and VL locomotives

Version April 2016

Operation of freight vehicles and locomotives on the Cronulla line is normally not permitted, and the note S restriction applies (as detailed in Notes for *Maximum speed of locomotives and rolling stock - Sydney Metropolitan Area* on page 72). However the use of 81, 82, BL, C, G, GL, RL, VL Class locomotives is permitted on the Cronulla line for the purpose of line maintenance. The maximum speed of these locomotives shall be as detailed in Table 3 - Locomotive bridge speed restrictions on the Cronulla line:

Table 3 - Locomotive bridge speed restrictions on the Cronulla line

Location (km)	Structure Designation	Structure	Maximum speed (81, 82, BL, G Class) (km/h)	Maximum speed (RL, C Class) (km/h)	Maximum speed (RL, C Class) (km/h)
24.967	Princess Hwy	Steel underbridge	40	30	20
25.408	Merton St	Steel underbridge	40	30	20
25.795	Glencoe St	Steel underbridge	40	30	20
28.526	Sylvania Rd	Steel underbridge	40	30	20
29.473	Kiora Rd (Miranda station access)	Steel underbridge	40	30	20
29.516	Miranda station	Concrete subway	40	30	20
30.477	Kareena Rd	Steel underbridge	40	30	20
32.537	Gannons Rd	Steel underbridge	40	30	20
34.431	Searl Rd (Burraneer Bay Rd)	Concrete underbridge	40	30	20
34.665	Cronulla station	Concrete subway	40	30	20

The maximum speed on all other sections of the Cronulla line (not detailed in Table 3) shall not exceed 50 km/h.

The Network Maintainers Civil Maintenance Engineer (in charge of the Cronulla Line) shall be notified of any freight vehicle operation on the Cronulla line by the next working day.

General - Sectional running times and full sectional loads

Version April 2020

The locomotive-load-run times configurations (DOWN loads and UP loads) published in this section are for existing approved paths in the Standard Working Timetable (SWTT). For configurations that are not listed, the train shall run at the discretion of the train controller, based on the following:

- The trailing load does not exceed the sum of individual locomotive full sectional loads, accounting for load reductions specified in (TS TOC.1 Section 2.11 and 2.12)
- There is capacity on the network (based on the live status and the SWTT/DWTT) for the train controller to allocate additional times for the train if longer journey or sectional running times, or both are foreseen.
- The operator operates to the assigned schedule or under the direction of the train controller to ensure the train's arrival at critical junctions or destinations does not cause train control conflicts to the network.

The sectional running times published are based on RailNet Running Time Profiles (simulations). Train consists (locomotive and trailing loads) used in the simulations are based on the length limits in the train operating length diagram in TS TOC 1 (Section 1.11) with no speed restrictions applied.

Any planned and timetabled sectional running times used in ad hoc paths, Daily Working Timetable, and Standard Working Timetable have additional time added to the published running times (for example recovery time), which should be accounted for by the train controller / planner / programmer as appropriate.

Main South – DOWN loads

Version December 2020

	DOWN LOADS SECTIONS	LOCO-MOTIVE CLASS = L	SINGLE	DOUBLE	TRIPLE	QUAD	VEHICLE CLASS	SECT RUN TIMES	NOTES
			LOAD - TONNES						
1	**SYDNEY METROP – MACARTHUR**	L4	675	1350	2025	2700	A	A	
2	**SYDNEY METROP – MACARTHUR**	L4	800	1600	2400	3200	A	A1	
3	**SYDNEY METROP – MACARTHUR**	L8	650	1300	--	--	A	A1	
4	**SYDNEY METROP – MACARTHUR**	L9	500	1000	1500	2000	A	A1	
5	**SYDNEY METROP – MACARTHUR**	L2	1300	2600	3900	5200	A	A2	
6	**SYDNEY METROP – MACARTHUR**	L4	970	1940	2910	3880	A	A2	
7	**SYDNEY METROP – MACARTHUR**	L8	875	1750	2625	3490	A	A2	
8	**SYDNEY METROP – MACARTHUR**	L9/L10	610	1220	1830	2440	A	A2	
9	**SYDNEY METROP – MACARTHUR**	AC6	1500	3000	4600*	--	A	A2	*
10	**SYDNEY METROP – MACARTHUR**	AC6 + L2	--	2750	--	--	A	A2	b
11	**SYDNEY METROP – MACARTHUR**	AC6 + 2 x L2	--	--	4050	--	A	A2	b
12	**SYDNEY METROP – MACARTHUR**	2 x AC6 + L2	--	--	4200	--	A	A2	b
13	**SYDNEY METROP – MACARTHUR**	AC6 + L2	--	2750	--	--	ABCE	C1	b
14	**SYDNEY METROP – MACARTHUR**	L2	1300	2600	3900	5200	ABCE	C1	
15	**SYDNEY METROP – MACARTHUR**	L4	970	1940	2910	3880	ABCE	C1	
16	**SYDNEY METROP – MACARTHUR**	L8	875	1750	2625	3490	ABCE	C1	
17	**SYDNEY METROP – MACARTHUR**	L9/L10	610	1220	1830	2440	ABCE	C1	
18	**SYDNEY METROP – MACARTHUR**	L11	550	1100	1650	2200	ABCE	C1	
19	**SYDNEY METROP – MACARTHUR**	AC6	1500	3000	4600*	--	ABCE	C2	*
20	**SYDNEY METROP – MACARTHUR**	L3	1200	2400	3600	4800	ABCE	C2	
21	**SYDNEY METROP – MACARTHUR**	L4	1130	2260	3390	4520	ABCE	C2	
22	**SYDNEY METROP – MACARTHUR**	L5	1047	2094	3141	4188	ABCE	C2	
23	**SYDNEY METROP – MACARTHUR**	L6	926	1852	2778	3704	ABCE	C2	
24	**SYDNEY METROP – MACARTHUR**	L7	909	1818	2727	3636	ABCE	C2	
25	**SYDNEY METROP – MACARTHUR**	L8	875	1750	2625	3490	ABCE	C2	
26	**SYDNEY METROP – MACARTHUR**	L9	750	1500	2250	3000	ABCE	C2	
27	**SYDNEY METROP – MACARTHUR**	L10	725	1450	2175	2900	ABCE	C2	
28	**SYDNEY METROP – MACARTHUR**	L11	640	1280	1920	2560	ABCE	C2	
29	**SYDNEY METROP – MACARTHUR**	L12	615	1230	1845	2460	ABCE	C2	
30	**SYDNEY METROP – MACARTHUR**	L13	310	615	925	1230	ABCE	C2	

Note - All the above published loads in the Down direction can depart Metropolitan sites via the Main or East Hills.

Note - For trains via the East Hills line refer to Note R, Notes for Maximum speed of locomotives and rolling stock - Sydney Metropolitan Area (page 72) of this section.

Note - Refer to table of Sydney Metropolitan Area – freight and locomotive running times.

b The AC6 locomotive shall be a C44ACi or GT46CACe type AC locomotive and the L2 locomotive can be NR or AN class. A full listing of approved AC6 locomotives (United Group Ltd – C44ACi, Downer EDI Rail – GT46C-ACe and CRRC Ziyang – SDA1) is summarised under Table 8 Approved locomotives grouped into load categories – locomotive type AC in TS TOC 1.

* Total trialling load limited to 4500 t only if consist contains any SDA1 type AC locomotives.

Main South – DOWN sectional running times and full sectional loads

Version April 2021 (5.14)

DOWN	SECTIONAL RUNNING TIMES (INDICATIVE)						FULL SECTIONAL LOADS LOCOMOTIVE CATEGORIES = L	
	A	A1	A2	C1	C2	Loco	1 2 3 4 5 6 7 8 9 10 11 12 13	GRADE
ENFIELD WEST to:	↘	↘	↘	↘	↘	↘	Refer to Sydney Metropolitan Area – sectional freight loads (page 73) for Full Sectional Freight loads and grades	
SEFTON PRK JCT	02:48	02:48	02:48	02:48	02:48	03:00		
LEIGHTONFIELD	04:30	04:30	04:30	04:30	04:30	03:06		
CLYDE YARDS	..	..	..	..	..	..		
GRANVILLE	..	..	..	..	..	..		
FAIRFIELD	..	..	..	..	..	..		
CABRAMATTA JCT	03:24	03:24	03:24	03:24	03:24	03:54		
LIVERPOOL	03:48	03:48	03:48	03:48	03:48	04:00		
GLENFIELD	05:42	05:42	05:42	05:42	05:42	06:12		
INGLEBURN	03:42	03:48	03:48	03:48	03:54	03:36		
CAMPBELLTOWN	07:06	07:30	07:48	07:48	07:36	05:48		
MACARTHUR	01:36	01:36	01:36	01:36	01:36	01:24		
Sefton Park Junction – Cabramatta Junction								
SEFTON PRK JCT to:	↘	↘	↘	↘	↘	↘	Refer to Sydney Metropolitan Area – sectional freight loads (page 73) for Full Sectional Freight loads and grades	
LIDCOMBE LOOP	11:36	11:36	11:36	06:30	06:30	06:00		
AUBURN	06:36	03:48	06:36	03:48	03:48	02:24		
CLYDE	02:18	02:12	02:12	02:12	02:12	03:00		
GRANVILLE	00:36	00:42	00:42	00:42	00:42	00:42		
MERRYLANDS	02:42	02:42	02:42	02:42	02:42	02:00		
YENNORA JCT	02:48	02:48	02:48	02:48	02:48	03:00		
CABRAMATTA JCT	06:12	06:12	06:12	06:12	06:12	04:36		
Parramatta – Merrylands (Y-link)								
PARRAMATTA to:	↘	↘	↘	↘	↘	↘	Refer to Sydney Metropolitan Area – sectional freight loads (page 73) for Full Sectional Freight loads and grades	
MERRYLANDS	03:24	03:24	03:24	03:24	03:24	03:00		

Main South – UP loads

Version December 2020

	UP LOADS	LOCO-MOTIVE CLASS = L	SINGLE	DOUBLE	TRIPLE	QUAD	TRAIN DATA		
	SECTIONS		LOAD - TONNES				VEHICLE CLASS	SECT RUN TIMES	NOTES
1	**MACARTHUR - SYDNEY METROP**	L4	675	1350	2025	2700	A	A	
2	**MACARTHUR - SYDNEY METROP**	L4	800	1600	2400	3200	A	A1	
3	**MACARTHUR - SYDNEY METROP**	L8	650	1300	- -	- -	A	A1	
4	**MACARTHUR - SYDNEY METROP**	L9/L10	500	1000	1500	2000	A	A1	
5	**MACARTHUR - SYDNEY METROP**	L2	1300	2600	3900	5200	A	A2	
6	**MACARTHUR - SYDNEY METROP**	L4	970	1940	2910	3880	A	A2	
7	**MACARTHUR - SYDNEY METROP**	L8	822	1644	- -	- -	A	A2	
8	**MACARTHUR - SYDNEY METROP**	L8+L10	- -	1360	- -	- -	A	A2	
9	**MACARTHUR - SYDNEY METROP**	L9/L10	610	1220	1830	2440	A	A2	
10	**MACARTHUR - SYDNEY METROP**	AC6	1500	3000	4500	- -	A	A2	
11	**MACARTHUR - SYDNEY METROP**	AC6 + L2	- -	2750	- -	- -	A	A2	b
12	**MACARTHUR - SYDNEY METROP**	AC6 + 2 x L2	- -	- -	4050	- -	A	A2	b
13	**MACARTHUR - SYDNEY METROP**	2 x AC6 + L2	- -	- -	4200	- -	A	A2	b
14	**MACARTHUR - SYDNEY METROP**	L2	1500	3000	4500	6000	AB	B1	
15	**MACARTHUR - SYDNEY METROP**	AC6	1500	3000	4500	- -	AB	B1	
16	**MACARTHUR - SYDNEY METROP**	AC6 + L2	- -	3000	- -	- -	AB	B1	b
17	**MACARTHUR - SYDNEY METROP**	AC6 + 2 x L2	- -	- -	4050	- -	AB	B1	b
18	**MACARTHUR - SYDNEY METROP**	L2	1100	2200	3300	4400	ABCE	C1	
19	**MACARTHUR - SYDNEY METROP**	L4	970	1940	2910	3880	ABCE	C1	
20	**MACARTHUR - SYDNEY METROP**	L8	875	1750	2625	3490	ABCE	C1	
21	**MACARTHUR - SYDNEY METROP**	L9/L10	610	1220	1830	2440	ABCE	C1	
22	**MACARTHUR - SYDNEY METROP**	AC6	1100	2200	3300	- -	ABCE	C1	
23	**MACARTHUR - SYDNEY METROP**	L2	1600	3200	4800	6400	ABCE	C2	
24	**MACARTHUR - SYDNEY METROP**	L3/L4	1200	2400	3600	4800	ABCE	C2	
25	**MACARTHUR - SYDNEY METROP**	L5	1047	2094	3141	4188	ABCE	C2	
26	**MACARTHUR - SYDNEY METROP**	L6	926	1852	2778	3704	ABCE	C2	
27	**MACARTHUR - SYDNEY METROP**	L7	909	1818	2727	3636	ABCE	C2	
28	**MACARTHUR - SYDNEY METROP**	L8	875	1750	2625	3490	ABCE	C2	
29	**MACARTHUR - SYDNEY METROP**	L9	750	1500	2250	3000	ABCE	C2	
30	**MACARTHUR - SYDNEY METROP**	L10	725	1450	2175	2900	ABCE	C2	
31	**MACARTHUR - SYDNEY METROP**	L11	640	1280	1920	2560	ABCE	C2	
32	**MACARTHUR - SYDNEY METROP**	L12	615	1230	1845	2460	ABCE	C2	
33	**MACARTHUR - SYDNEY METROP**	L13	310	615	925	1230	ABCE	C2	
34	**MACARTHUR - SYDNEY METROP**	L3/L4	1650	3250	- -	- -	ABCE	C3	
35	**MACARTHUR - SYDNEY METROP**	L10	1290	2580	- -	- -	ABCE	C3	
36	**MACARTHUR - SYDNEY METROP**	L11	1020	2040	3200	- -	ABCE	C4	
47	**MACARTHUR - SYDNEY METROP**	L13	510	1020	1530	2040	ABCE	C4	

Note - All the above published loads in the Up direction may enter Metropolitan sites via the Main or East Hills line with the following conditions:

Clear run shall be given Revesby to Narwee.

Note - For trains via the East Hills line refer to Note R, Notes for Maximum speed of locomotives and rolling stock - Sydney Metropolitan Area (page 72) of this section.

Note - Refer to table of Sydney Metropolitan Area – freight and locomotive running times.

b The AC6 locomotive shall be a C44ACi or GT46CACe type AC locomotive and the L2 locomotive can be NR or AN class. A full listing of approved AC6 locomotives (United Group Ltd – C44ACi, Downer EDI Rail – GT46C-ACe and CRRC Ziyang – SDA1) is summarised under Table 8 Approved locomotives grouped into load categories – locomotive type AC in TS TOC 1.

Main South – UP sectional running times and full sectional loads

Version April 2021 (5.14)

UP	SECTIONAL RUNNING TIMES (INDICATIVE)									FULL SECTIONAL LOADS LOCOMOTIVE CATEGORIES = L													
	A	A1	A2	B1	C1	C2	C3	C4	Loco	1	2	3	4	5	6	7	8	9	10	11	12	13	GRADE
MACARTHUR to:	↘	↘	↘	↘	↘	↘	↘	↘	↘	Refer to Sydney Metropolitan Area – sectional freight loads (page 64) for Full Sectional Freight loads and grades													
CAMPBELLTOWN	02:24	02:30	02:36	02:42	02:30	02:42	02:54	03:00	01:54														
INGLEBURN	07:42	07:42	07:48	07:54	08:00	08:00	08:12	08:48	07:06														
GLENFIELD	03:30	03:30	03:36	03:36	03:30	03:36	03:36	03:42	03:24														
LIVERPOOL	06:00	06:00	06:00	06:00	06:00	06:00	06:00	06:00	06:30														
CABRAMATTA JCT	03:54	03:54	03:54	03:54	03:54	03:54	03:54	03:54	03:48														
LEIGHTONFIELD	04:00	04:00	04:00	04:00	04:00	04:00	04:00	04:00	03:36														
SEFTON PRK JCT	03:18	03:18	03:18	03:18	03:18	03:18	03:18	03:18	03:24														
ENFIELD WEST	03:36	03:36	03:36	03:36	03:24	03:24	03:36	03:36	02:00														
Cabramatta Junction – Sefton Park Junction																							
CABRAMATTA JCT to:	↘	↘	↘	↘	↘	↘	↘	↘	↘	Refer to Sydney Metropolitan Area – sectional freight loads (page 64) for Full Sectional Freight loads and grades													
YENNORA JCT	05:36	05:36	05:36	05:36	05:36	05:36	05:36	05:36	04:18														
MERRYLANDS	03:48	03:48	03:48	03:48	03:48	03:48	03:48	03:48	04:06														
GRANVILLE	03:00	03:00	03:00	03:00	03:00	03:00	03:00	03:00	02:42														
CLYDE	00:30	00:30	00:30	00:30	00:30	00:30	00:30	00:30	00:36														
AUBURN	02:24	02:24	02:24	02:24	02:24	02:24	02:24	02:24	02:12														
LIDCOMBE LOOP	03:00	03:00	03:00	03:00	03:00	03:00	03:00	03:00	02:54														
SEFTON PRK JCT	10:00	05:48	10:00	10:00	05:48	05:42	10:00	10:00	04:30														
Merrylands – Parramatta (Y-link)																							
MERRYLANDS to:	↘	↘	↘	↘	↘	↘	↘	↘	↘	Refer to Sydney Metropolitan Area – sectional freight loads (page 64) for Full Sectional Freight loads and grades													
PARRAMATTA	03:54	03:54	03:54	03:54	03:54	03:54	03:54	03:54	03:36														

Location of speed signs

Version August 2021: Section 2e, 3a, 4, 5a, 5b, 6a, 7a, 8a, 12

Version April 2021: Section 2e, 6a, 8c

Speed signs for the area bounded by Hornsby, Penrith, Macarthur and Waterfall

For speed signs beyond **Hornsby** refer to **Northern Division Pages** Location of speed signs (page 27).
For speed signs beyond **Penrith** refer to **Western Division Pages** Location of speed signs (page 42).
For speed signs beyond **Waterfall** refer to **Illawarra Division Pages** Location of speed signs (page 56).

	Sub Section	Area	Tracks
City	1	City Circle	City Outer, City Inner
West Suburban	2a	Central – Homebush	Main
	2b	Central – Homebush	Suburban
	2c	Central – Homebush	Local
	2d	Homebush – St Marys	Main, West Suburban, Suburban
	2e	Homebush – St Marys	Suburban, West Main, Main
West	2f	St Marys – Penrith	Down and Up Main lines
Suburban	2g	Eveleigh – Redfern	Up Engine Dive
	2h	Illawarra Dive	Down and Up Illawarra line
	2i	Strathfield Flyover	Down and Up North Suburban
	2j	Lidcombe Loop	Single line loop
	2k	Y Link Granville	South – West Inner and Outer
Richmond	4	Blacktown – Richmond	Single line
South	5a	Lidcombe – Macarthur	Down and Up Main line
	5b	Granville – Cabramatta	Down and Up Old South lines
	5d	Glenfield	Turnback Road
North Shore	6a	Central – Hornsby	Down and Up Shore lines
	6c	Waverton – North Sydney Car Sidings	Single line
North	7a	Strathfield – Hornsby	Down and Up Main lines
	7b	Nth Strathfield – Rhodes	Down Relief
	7c	West Ryde – Epping	Down and Up Suburban
	7d	Epping – Thornleigh	Down Relief
Illawarra	8a	Central – Hurstville	Down and Up Illawarra lines
	8b	Central – Hurstville	Down and Up Illawarra Local lines
	8c	Hurstville – Waterfall	Down and Up Main lines
	8d	Hurstville – Sutherland Bi Directional	Down and Up Main lines
	8e	Eveleigh Yard	Yard
	9	Sutherland – Cronulla	Double line
Eastern Suburbs	10	Erskineville Junction – Bondi Junction	Down and Up Eastern Suburbs Down and Up Illawarra Relief
Bankstown	11	Sydenham – Regents Park	Down and Up lines
Airport Line	12	Central – Wolli Creek	Down and Up lines
East Hills	13	Wolli Creek Junction – Glenfield	Down and Up lines
	13a	Turrella – Revesby	Down and Up Local lines
Metropolitan Freight	14a	ARTC Boundary – Flemington West Jct	Refer to ARTC for Boundary to Meeks Rd
	14b	Marrickville – Botany	Deleted – Refer to ARTC
	14d	ARTC Boundary – Sefton Park Jct	Refer to ARTC for Boundary to Chullora Jt
	14e	Flemington East Jun – Flemington Sth Jn	Metropolitan Freight Lines
	14f	Nth Strathfield Jun – Flemington Mkts Jn	Metropolitan Freight Lines
	14g	Flemington Goods Jun – Olympic Park	Metropolitan Freight Lines
Leppington	15	Glenfield – Leppington	Down and Up lines
	15a	Glenfield – Leppington	Down and Up loop lines

Sydney Metropolitan Area – Division page references

Section 1
City Circle

KILO-METRAGE	OUTER Nor-mal	OUTER XPT	INNER Nor-mal	INNER XPT
5.895#	**Central**			
0.270	..	..	40	..
0.440	30	..	..	..
0.660	..	..	30	..
0.885	40	..	..	..
1.176	**Town Hall**			
1.680	..	..	40	..
1.851	40	..	..	..
2.047	**Wynyard**			
2.974	**Circular Quay**			
4.401	**St James**			
4.990	**Museum**			
5.310	30	..	..	..
5.437	40	..	..	..
5.895#	**Central**			

Via City Outer

Section 2a
Central – Homebush
Sydney Yard

KILO-METRAGE	DOWN Nor-mal	DOWN XPT	UP Nor-mal	UP XPT
0.000	**Sydney Terminal**			
	Mortuary			
0.695	..	..	15	..
	Roads 1 to 2 (Up and Down Mains)			
0.060	X15	..	..	..
	P1B Pts Rd 1 to Middle Rd			
0.060	X15	..	..	..
	P2B Pts Rd 1 to Middle Rd			
0.120	..	..	X15	..
	P1A/P2A Pts Middle Rd to Rds 1 & 2			
0.200	X15	..	..	..
	151B/154B Pts Middle Rd to Rds 1 & 2			
0.250	..	..	X15	..
	151A Pts Rd 1 to Middle Rd			
0.250	..	..	X15	..
	154A Pts Rd 1 to Middle Rd			
0.370	X15	..	..	..
	157B Pts Rd 2 to Up Main			
0.395	X40	..	..	..
	162 Pts Rd 2 to Down Main			
0.425	..	..	X40	..
	157A Pts Up Main to Rds 1 & 3			
0.465	X40	..	..	..
	234B Pts Up Main to Down Main			
0.670	..	..	X40	..
	247A Pts Up Main to Up Yard Sub			
0.935	..	..	X40	..
	264A Pts Up Main to Up Yard Sub			
0.980	*Up Main*		40	..
	Roads 3 to 4			
0.335	..	..	X40	..
	166A Pts Rd 3 to Rd 4			
0.340	X15	..	..	..
	160B/161B Pts Rd 3 to Rd 4			
0.390	..	..	X15	..
	157B Pts Rd 3 to Rd 2			
0.395	X40	..	..	..
	162 Pts Rd 4 to Down Main			
0.395	..	..	X15	..
	161A Pts Rd 4 to Rd 3			
	Roads 5 to 6 (Up & Down Yard Subs)			
0.305	X40	..	..	..
	238B Pts Rd 5 to Rd 6			
0.395	..	..	X40	..
	183 Pts Down Yard Sub to Rd 7			
0.430	..	..	X40	..
	182A Pts Down Yard Sub to Rd 8			
0.465	X40	..	..	..
	235B Pts Down Yard Sub to Down Yard Sub			
0.535	..	..	X40	..
	235A Pts Up Yard Sub to Down Yard Sub			
0.565	..	..	X40	..
	239A Pts Up Yard Sub to Up Banks			
0.575	X40	..	..	..
	241B Pts Down Yard Sub to Down Main			
0.640	X40	..	..	..
	243A Pts Down Yard Sub to Down Yard Sub			
0.670	..	..	X40	..
	242A Pts Up Yard Sub to Up Banks			
0.670	X15	..	..	..
	246B Pts Up Yard Sub to Down Yard Sub			
0.730	..	..	X15	..
	246A Pts Down Yard Sub to Up Yard Sub			
0.960	X40	..	..	..
	265A Pts Down Yard Sub to Down Main			
	Roads 7 to 8			
0.365	X40	..	..	..
	183 Pts Rd 7 to Rd 6			
0.400	X40	..	..	..
	182A Pts Rd 8 to Down Yard Sub			
	Roads 9 to 10 (Up and Down Bankstown)			
0.200	..	..	10	..
	Roads 9, 10, and Middle Rd			
0.270	X40	..	..	..
	195A Pts Rd 9 to Rd 9			
0.310	X40	..	..	..
	192B Pts Rd 9 to Rd 10			
0.380	X15	..	..	..
	193B Pts Rd 10 to Up Banks			
0.400	*Road 9*		25	..
0.455	X40	..	..	..
	240B Pts Down Banks to Down Yard Sub			
	Roads 11 & 12			
0.220	*Road 12*		10	..
0.230	*Road 11*		10	..
0.300	X15	..	..	..
	203B Pts Rd 12 to Rd 11			
0.350	..	..	X15	..
	203A Pts Rd 11 to Rd 12			
0.400	..	..	X15	..
	193A Pts Rd 11 to Rd 10			

Section 2a
Central – Homebush
Main lines

KILO-METRAGE	DOWN Nor-mal	DOWN XPT	UP Nor-mal	UP XPT
1.080	X15	..	..	..
	Up Main 266A points			
1.025	80	..	..	..
1.299	**Redfern**			
1.330	X15	..	..	..
	Up Main 647 crossover			
1.405	..	..	50	..
2.235	667 Pts		X25	..
2.476	**Macd'town**			
3.100	**Newtown**			
4.005	..	..	70	..
4.671	**Stanmore**			
5.499	**Petersham**			
6.246	**Lewisham**			
6.255	100	..	80	..
7.032	**Summer Hill**			
8.376	**Ashfield**			
9.424	**Croydon**			
10.060	80	..	..	..
10.624	**Burwood**			
11.530	80	..	90	..
11.806	**Strathfield**			
12.030	X25	..	..	..
12.030	65	..	..	..
12.130	80	..	..	..
12.195	..	..	50	..
12.742	**Homebush**			

Section 2b
Central – Homebush
Suburban Lines

KILO-METRAGE	DOWN Nor-mal	DOWN XPT	UP Nor-mal	UP XPT
0.000	**Central**			
0.211	..	..	45	..
0.513	65	..	..	..
1.299	**Redfern**			
1.351	..	..	60	..
1.655	80	..	..	..
2.476	**Macd'town**			
3.040	..	..	80	..
3.100	**Newtown**			
3.200	50	..	..	..
3.270	..	..	50	..
3.360	80	..	..	..
4.671	**Stanmore**			
5.499	**Petersham**			
6.246	**Lewisham**			
7.032	**Summer Hill**			
7.750	50	..	80	..
8.290	80	..	50	..
8.376	**Ashfield**			
9.424	**Croydon**			
10.624	**Burwood**			
11.200	..	..	80	..
11.344	60	..	..	..
11.630	..	..	60	..
11.806	**Strathfield**			
11.930	X25			
11.930	55	..	..	..
12.470	..	..	80	..
12.575	602 Pts		X25	..
12.600	80	..	..	..
12.602	..	..	55	..
12.742	**Homebush**			

Section 2c
Central – Homebush Local Lines

KILO-METRAGE	DOWN Normal	DOWN XPT	UP Normal	UP XPT
0.000	**Central**			
0.900	50	..	..	..
1.056	*642A pts*		X15	..
1.299	**Redfern**			
2.476	**Macd'town**			
3.100	**Newtown**			
3.315	..	..	50	..
4.000	70	..	..	..
4.671	**Stanmore**			
5.499	**Petersham**			
5.600	75	..	..	..
6.140	..	..	60	..
6.246	**Lewisham**			
7.032	**Summer Hill**			
7.725	70	..	..	..
7.750	..	..	75	..
8.200	50	..	50	..
8.200	X25	..	*521B Pts*	
8.376	**Ashfield**			
8.460	25	..	Term. Rd	
8.460	25	..	..	..
8.580	50	..	..	..
8.700	70	..	..	..
9.424	**Croydon**			
10.624	**Burwood**			
11.000	..	..	70	..
11.335	50	..	..	..
11.733	..	..	50	..
11.806	**Strathfield**			
12.500	45	..	70	..
12.500	X35	..	*603B Pts*	
12.600	..	..	45	..
#12.654	**Homebush**			
12.770	40	..	..	..
12.774	X35	..	*617A Pts*	
	Local terminal Road			
12.890	X40	..	*618B Pts*	

Down Local Platform KM only

Section 2d
Homebush – St Marys

KILO-METRAGE	DOWN General	DOWN Medium	DOWN High	UP General	UP Medium	UP High
	Main Lines					
12.742	**Homebush**					
12.873	..	..	..	70	70	70
14.324	**Flemington**					
14.605	*632B Pts*			X25	..	..
14.615	X35	..	..	*635 Pts*		
14.882	**Flem CS Jun**					
16.130	*702 Pts*			X35	..	..
16.195	X40	..	..	*703A Pts*		
16.606	**Lidcombe**					
16.695	60	80	80	..	..	..
16.775	..	..	..	80	80	80
17.450	60	100	100	..	..	..
18.625	**Auburn**					
19.575	..	..	..	60	100	100
19.700	60	80	80	..	..	..
20.660	**Clyde**					
21.224	**Granville**					
21.465	70	70	75	60	80	80
	Suburban Lines					
21.540	X50	..	..	*711 Pts*		
21.645	*712 Pts* ⓤ			*X50*	..	..
21.850	..	..	..	70	70	75
22.000	80	80	85	..	..	..
22.533	**Harris Park**					
22.800	..	..	..	80	80	85
23.040	60	60	65	..	..	..
23.204	**Parramatta**					
23.386	..	..	..	50	60	65
23.550	80	85	90	..	..	..
24.634	..	..	..	50	75	75
24.800	X50	..	..	*728A Pts*		
25.050	80	100	105	..	..	..
25.066	..	..	..	50	100	105
25.162	**Westmead**					
25.300	80	115	115	..	..	..
25.475	..	..	..	50	100	115
26.035	..	..	..	50	115	115
26.548	..	..	..	70	115	115
26.637	**Wentworthville**					
28.294	**Pendle Hill**					
29.962	**Toongabbie**					
31.500	80	100	100	80	115	115
32.060	**Seven Hills**					
32.410	X40	..	..	*304A Pts*		
33.231	80	115	115	..	..	..
34.000	..	..	..	80	105	105
34.048	80	100	115	..	..	..
34.075	X35	..	..	*306A Pts*		
34.178	X70	..	..	*352A Pts*		
34.210	X40	..	..	*307A Pts* ⓓ		
34.210	80	100	100	ⓓ	ⓓ	ⓓ
34.710	X35	..	..	*311A Pts* ⓓ		
34.801	..	..	..	80	100	100
34.874	**Blacktown**					
35.000	80	115	115	..	..	..
35.747	..	..	..	70	100	100
35.830	X25	..	..	*319A Pts* ⓓ		
35.895	*318B Pts*			X25	..	..
38.592	**Doonside**					
40.905	**Rooty Hill**					
41.226	..	..	..	80	115	115
42.537	..	..	..	75	115	115
43.291	**Mt Druitt**					
46.715	*805B Pts*			X50	..	..
47.000	..	..	..	80	115	115
47.420	**St Marys**					
47.580	X40	..	..	*811A Pts*		

ⓓ Down sign on Up Suburban
ⓤ Up sign on Down Suburban

Section 2e
Homebush – St Marys Suburban / Main

KILO-METRAGE	DOWN General	DOWN Medium	DOWN High	UP General	UP Medium	UP High
	Suburban Lines					
12.742	**Homebush**					
12.986	80	80	80	..	..	..
14.324	**Flemington**					
14.400	X25	..	..	*631A Pts*		
14.882	**Flem CS Jun**					
16.331	*704B Pts*			X40	..	..
16.350	45	45	45	..	..	..
16.606	**Lidcombe**					
16.715	..	..	..	80	80	80
16.715	X25	..	..	*713A Pts*		
16.800	*714 Pts*			X35	..	..
16.890	60	80	80	..	..	..
18.208	*604B Pts*			X40	..	..
	Up sign on Down Suburban					
18.625	**Auburn**					
18.721	ⓤ			50		
20.570	..	..	..	60	80	80
20.660	**Clyde**					
21.020	X40	..	..	*705A Pts*		
	On Down Relief					
21.224	**Granville**					
21.435	*706B Pts*			X40	..	..
21.465	X40	..	..	*708A Pts*		
21.465	75	75	75	55	55	55
	Main Lines					
21.510	*709Pts*			X40	..	..
21.547	X40	..	..	*710A Pts*		
21.640	*710A Pts* ⓤ			X35	..	..
21.685	..	..	..	50	50	50
21.685	X35	..	..	*713A Pts* ⓓ		
21.800	*714B Pts*			X50	..	..
21.850	80	80	80	..	..	..
22.190	ⓤ	ⓤ	ⓤ	50	50	50
22.190	*715 Pts* ⓤ			X75	..	..
22.360	*716B Pts*			X75	..	..
22.397	75	75	80	..	..	..
22.533	**Harris Park**					
23.206	**Parramatta**					
23.614	*726B Pts*			X30	..	..
24.000	..	..	..	75	75	80
24.645	..	..	..	50	60	65
25.000	60	60	65	..	..	..
25.100	*730B Pts*			X40	..	..
25.162	**Westmead**					
25.300	80	100	100	..	..	..
25.370	..	..	..	50	80	85
26.075	..	..	..	50	115	115
26.475	..	..	..	70	115	115
26.637	**Wentworthville**					
28.045	..	..	..	80	115	115
28.294	**Pendle Hill**					
28.365	..	..	..	80	100	100
28.525	80	115	115	..	..	..
29.962	**Toongabbie**					
31.500	..	..	..	80	115	115
32.060	**Seven Hills**					
32.220	X50	..	..	*301 Pts*		
32.255	80	90	90	..	..	..
33.380	X65	..	..	*305A Pts*		
34.000	..	..	..	80	105	105
34.265	*307B Pts*			X40		
34.265	80	100	100	ⓓ	ⓓ	ⓓ
34.720	X40	..	..	*312A Pts* ⓓ		
34.801	..	..	..	80	100	100
34.835	*312B Up Loop*			X25	..	..
34.874	**Blacktown**					

KILO-METRAGE	DOWN			UP		
	General	Medium	High	General	Medium	High
35.000	80	115	115	..	..	..
35.745	..	..	..	70	100	100
35.780	*317B Pts*			X25	..	..
38.592	**Doonside**					
39.476	X25	..	..	*50A Pts* ⓓ		
40.600	80	95	95	..	..	..
40.905	**Rooty Hill**					
41.226	..	..	..	80	115	115
41.250	80	115	115	..	..	..
42.537	..	..	..	75	115	115
43.291	**Mt Druitt**					
46.696	..	..	..	80	115	115
47.250	80	95	95	..	..	..
47.280	..	..	..	80	105	105
47.420	**St Marys**					
47.670	*810B Pts*			X40	..	..

ⓓ Down sign on Up Main
ⓤ Up sign on Down Main

Section 2f
St Marys – Penrith

KILO-METRAGE	DOWN			UP		
	General	Medium	High	General	Medium	High
47.420	**St Marys**					
47.580	X40	..	..	*809B Pts*		
47.670	*810B Pts*			X40	..	..
47.900	80	115	115	..	..	..
49.084	**Werrington**					
49.300	..	..	..	80	115	115
50.567	..	..	..	80	105	105
52.030	60	80	80	..	..	..
52.702	**Kingswood**					
53.990	100	100	115	..	..	..
54.700	75	75	80	80	115	115
54.970	*61 Pts* ⓤ			X35	..	..
55.086	**Penrith**					

ⓤ Up sign on Down Main

Section 2g
Up Engine Dive
Eveleigh – Redfern

KILO-METRAGE	DOWN		UP	
	Normal	XPT	Normal	XPT
1.100	15	..	..	..
1.490	..	..	15	..
1.544	*654B Catchpoint*		X25	..
1.649	*658 Pts*		15/X15	..
1.649	15	..	..	..
1.750	..	..	15	..

Section 2h
Illawarra Dive
Down – Up

KILO-METRAGE	DOWN		UP	
	Normal	XPT	Normal	XPT
1.299	Redfern			
1.540	X30	..	..	..
2.260	X25	..	..	..
2.300	..	..	30	..

Section 2i
Strathfield Flyovers
Down / Up North
Suburban

KILO-METRAGE	DOWN		UP	
	Normal	XPT	Normal	XPT
12.028	35	..	..	..
12.450	X35	..	*533A Pts*	
12.454	..	..	35	..

Section 2j
Lidcombe Loop

KILO-METRAGE	DOWN		UP	
	Normal	XPT	Normal	XPT
	Down and Up			
17.140	15	..	..	..

Section 2k
Y Link Granville

KILO-METRAGE	SOUTH WEST OUTER		SOUTH WEST INNER	
	Normal	XPT	Normal	XPT
21.530	..	..	X75	..
21.730	50	..	..	..
22.530	70	..	..	..
22.620	..	..	50	..

Section 4
Blacktown – Richmond

KILO-METRAGE	DOWN			UP		
	General	Medium	High	General	Medium	High
32.060	**Seven Hills**					
	Branch					
32.400	70	..	..	..	..	..
32.850	*309A Pts*			X70	..	..
34.724	25	..	..	ⓓ	..	..
34.725	X40	..	..	*314A Pts*		
34.765	50	..	..	..	..	..
34.874	**Blacktown**					
35.085	X25	..	..	*321A Pts*		
35.335	115	..	..	..	..	..
35.345	ⓤ	..	..	50	..	..
35.370	..	..	..	70	..	..
35.660	100	..	..	ⓓ	..	..
36.265	*375B Pts*			X20	..	..
36.895	X40	..	..	*335A Pts* ⓓ		
36.895	..	..	..	100	..	..
37.000	*335B Pts* ⓤ			X40	..	..
37.190	100	..	..	..	..	..

KILO-METRAGE	DOWN			UP		
	General	Medium	High	General	Medium	High
37.406	**Marayong**					
37.620	ⓤ	..	..	100	..	..
37.620	..	..	..	100	..	..
37.920	80	..	..	ⓓ	..	..
37.960	80	..	..	..	..	..
38.240	..	..	..	80	..	..
38.245	ⓤ	..	..	80	..	..
38.540	85	..	..	ⓓ	..	..
38.585	85	..	..	..	..	..
39.520	ⓤ	..	..	100	..	..
39.785	..	..	..	100	..	..
39.810	80	..	..	ⓓ	..	..
39.970	**Quakers Hill**					
40.115	..	..	..	80	..	..
40.115	100	..	..	ⓓ	..	..
40.450	100	..	..	..	..	..
40.450	ⓤ	..	..	85	..	..
42.205	..	..	..	100	..	..
42.205	115	..	..	ⓓ	..	..
42.250	115	..	..	..	..	..
42.250	ⓤ	..	..	100	..	..
42.250	X60	..	..	*51A Pts*		
42.345	*51B Pts*			X60	..	..
42.360	X60	..	..	*52A Pts* ⓓ		
42.485	*52B Pts* ⓤ			X60	..	..
42.855	**Schofields**					
43.215	..	..	..	115	..	..
43.215	X60	..	..	*53 Pts* ⓓ		
43.265	..	..	..	60	..	..
43.335	115	..	..	..	..	..
43.335	*53 Pts*			X60	..	..
45.310	60	..	..	..	..	..
45.650	..	..	..	115	..	..
45.959	**Riverstone**					
46.260	X35	..	..	*42B Pts*		
46.340	85	..	..	..	..	..
46.345	*42B Pts*			X35	..	..
46.410	..	..	..	60	..	..
46.480	20	..	..	⊗	..	..
46.585	⊗	..	..	20	..	..
47.480	115	..	..	85	..	..
49.225	**Vineyard**					
52.586	**Mulgrave**					
52.915	75	..	..	115	..	..
54.940	60	..	..	75	..	..
54.979	**Windsor**					
55.280	105	..	..	..	..	..
55.640	..	..	..	60	..	..
56.160	..	..	..	115	..	..
56.190	115	..	..	..	..	..
56.865	X50	..	..	*51A Pts*		
57.020	100	..	..	115	..	..
57.100	50	..	..	^	..	..
57.100	*51A Pts* ^			X50	..	..
57.218	**Clarendon**					
57.405	X50	..	..	*53B Pts* ^		
57.405	^	..	..	50	..	..
57.435	115	..	..	100	..	..
57.555	*53B Pts*			X50	..	..
59.645	50	..	..	..	..	..
59.810	..	..	..	115	..	..
59.996	**East Richmond**					
60.395	25	..	..	..	..	..
60.415	..	..	..	40	..	..
60.585	..	..	..	40	..	..

KILO-METRAGE	DOWN General	DOWN Medium	DOWN High	UP General	UP Medium	UP High
60.681	**Richmond**					

↓ Down sign on Up Richmond Branch.
↑ Up sign on Down Richmond Branch.
⊗ Level crossing sign *NGE 216 Level crossings.*
^ On Loop.

Section 5a
Lidcombe – Macarthur

KILO-METRAGE	DOWN General	DOWN Medium	DOWN High	UP General	UP Medium	UP High
16.606	**Lidcombe**					
16.715	..	..	..	#80	#80	#80
	# On Suburban Line					
16.715	X35	..	..	*713A Pts*		
16.815	X35	..	..	*^708B Pts*		
	^ Down sign on Turnback Road					
16.853	*708B Pts*↑			X15	..	..
16.853	↑	↑	↑	30	30	30
17.035	*709B Pts*			X30	..	..
17.420	..	..	..	45	45	45
17.468	70	80	80	..	..	..
18.357	**Berala**					
19.760	..	..	..	60	85	85
19.859	**Regents Park**					
19.925	50	50	50	..	..	..
20.035	X25	..	..	*207 Pts*		
	+ Kilometrage via Regents Park					
+20.657	**Sefton park Jct**					
+20.700	80	100	100	..	..	..
+20.701	*211 Pts*			X50	..	..
+20.814	..	..	..	50	50	50
+21.192	**Sefton**					
+21.493	..	..	..	70	85	85
+22.309	**Chester Hill**					
+23.665	**Leightonfield**					
+24.160	25	25	25	↓	↓	↓
+24.496	**Villawood**					
+25.655	..	..	..	80	100	100
+25.892	**Carramar**					
+26.088	..	..	..	75	100	100
+27.578	80	80	80	80	100	100
+28.065	X70	..	..	*121 Pts*		
31.820	*122 Pts to Carramar*			X70	X80 MU	..
31.832	80	100	100	..	..	..
31.991	**Cabramatta**					
32.236	..	..	..	70	80	80
34.158	**Warwick Farm**					
34.509	60	75	75	..	..	..
34.509	X60	..	..	*260A Pts*		
34.604	..	..	..	80	100	100
34.670	*60	*60	*60	..	..	..
	* On Transit Road					
35.266	75	75	75	..	..	..
35.325	X40	..	..	*265A Pts*		
35.521	$30	$30	$30	..	..	..
	$ On No. 3 Platform Road					
35.681	**Liverpool**					
35.785	X40	..	..	*$ 270A Pts*		
	$ On No. 3 Platform Road					
35.940	*60	*60	*60	..	..	..

KILO-METRAGE	DOWN General	DOWN Medium	DOWN High	UP General	UP Medium	UP High
	* On Transit Road					
36.200	X60	..	..	*275A Pts*		
	* On Transit Road					
36.333	..	..	..	65	75	75
36.400	80	95	95	..	..	..
38.642	80	90	95	..	..	..
38.801	**Casula**					
39.602	..	..	..	75	95	95
39.774	80	115	115	..	..	..
41.064	..	..	..	80	115	115
41.081	*Glenfield North Junction*					
41.082	60	100	100	..	..	..
41.300	60	100	100	..	..	..
41.343	..	..	..	80	115	115
41.359	X60	..	..	*53A Pts*		
41.640	*54B Pts*			X60	..	..
41.925	**Glenfield**					
42.017	X45	..	..	*60A Pts*		
42.020	..	..	..	60	115	115
42.670	*Glenfield South Junction*					
42.701	80	115	115	..	..	..
42.730	*58 Pts*			X60	..	..
43.703	..	..	..	60	115	115
43.802	**Macquarie Fields**					
44.560	70	115	115	..	..	..
45.109	100	115	115	..	..	..
45.646	**Ingleburn**					
46.670	..	..	..	95	115	115
47.032	..	..	..	70	115	115
49.534	..	..	..	95	115	115
49.671	**Minto**					
52.634	**Leumeah**					
53.052	..	..	..	95	105	105
53.712	75	115	115	..	..	..
54.015	..	..	..	60	105	105
54.476	75	85	85	..	..	..
54.714	**Campbelltown**					
55.251	..	..	..	60	100	100
55.367	95	100	105	..	..	..
56.280	..	..	..	70	100	100
56.356	25	..	..	X35	..	..
	Down Sign on Turnback Rd			*41 Pts Up Sign on Turnback Rd*		
56.733	**Macarthur**					
56.776	..	..	..	70	100	100
57.800	95	95	105	..	..	..
57.965	95	..	105	100	100	100
57.965	**TfNSW / ARTC Boundary**					

↓ Down sign on Up Main
↑ Up sign on Down Main

Section 5b
Granville – Cabramatta

KILO-METRAGE	DOWN General	DOWN Medium	DOWN High	UP General	UP Medium	UP High
21.224	**Granville**					
21.600	X15	↓		*750A Pts*		
21.655	X15	..	..	*751A Pts*		
21.655	*750B Pts*			X15	↑	..
21.725	*751B Pts On Loop*			X15	..	..
22.038	75	75	75	..	..	..
22.447	..	..	..	60	80	80
22.690	..	..	..	50 ↑	50 ↑	50 ↑
22.705	X70	..	..	756 Pts		
22.825	*756 Pts*			X50	↑..	..
22.875	*757 Pts*			X50	X70MU.	
22.935	*758B Pts*			X50	..	..
23.081	75	75	75	..	..	..
23.221	..	..	..	50	70	70
23.472	**Merrylands**					
24.632	75	90	95	..	..	..
24.887	..	..	..	60	75	75
25.490	..	..	..	60	75	80
25.723	**Guildford**					
26.335	70	100	100	..	..	..
26.722	80	100	100	..	..	..
27.332	70	70	70			
27.438	**Yennora**					
27.591	40	⊗..				
27.853	40	⊗..	..	..	..	..
28.182	..	..	..	80	90	90
28.306	90	100	100	..	..	..
28.586	..	..	..	40	⊗..	..
28.860	..	..	..	40	⊗..	..
28.997	**Fairfield**					
29.090	..	..	..	70	70	70
30.695	75	90	90	..	..	..
30.979	**Canley Vale**					
31.399	..	..	..	80	90	90
31.506	80	80	80	..	..	..
31.626	X80	..	..	121 Pts		
31.820	*122 Pts to Canley Vale*			X70	X80 MU	..
31.991	**Cabramatta**					

↓ Down sign on Up Old South
↑ Up sign on Down Old South
⊗ Level crossing sign *NGE 216 Level crossings*

Section 6a
Central – Hornsby (Shore)

KILO-METRAGE	DOWN Normal ↓	DOWN Up signs ↑	UP Normal ↑	UP Dwn signs ↓
0.000	**Central**			
0.270	..	..	40	..
0.440	30	..	..	..
0.590	..	..	30	..
0.785	40	..	..	..
1.176	**Town Hall**			
2.047	**Wynyard**			
2.173	60	..	..	..
2.982	..	..	40	..
3.340	55	..	..	..
4.435	**Milsons Point**			
4.880	30	..	50	..
5.134	**North Sydney**			
5.200	..	..	30	..
5.215	10	..	*No. 3 Platform*	
5.220	..	..	..	30
5.226	10	..	*No. 2 Platform*	
5.300	50	..	..	..
5.676	..	..	10	..
	No 2 & 3 Road Tunnel			
5.895	50	..	..	..

	DOWN	UP
6.110	**Waverton**	
6.225	.. ..	50 ..
6.480	50 ..	.. ..
7.175	**Wollstonecraft**	
7.505	.. ..	50 ..
7.645	50 ..	.. ..
8.100	80 ..	.. ..
8.410	**St Leonards**	
8.629	.. ..	50 ..
10.160	50 ..	.. ..
10.280	.. ..	75 ..
10.295	**Artarmon**	
10.560	80 ..	.. ..
10.860	.. ..	80 ..
11.020	70 ..	.. ..
11.220	.. ..	75 ..
11.570	.. ..	80 ..
11.682	**Chatswood**	
11.790	80 ..	.. ..
12.180	.. ..	60 ..
12.860	.. ..	80 ..
13.273	**Roseville**	
13.320	.. ..	70 ..
14.290	50 ..	80 ..
14.540	.. ..	45 ..
14.604	**Lindfield**	
14.725	75 ..	.. ..
15.889	**Killara**	
16.880	X40 ..	*50 Pts*
16.900	50 ..	.. ..
17.035	51 Pts	X40 ..
	On Platform Road	
17.118	**Gordon**	
17.250	X25 ..	↓ *52 Pts*
17.298	70 ..	.. ..
17.300	.. ..	75 ..
17.345	.. ..	X40 ..
18.896	**Pymble**	
19.070	80 ..	.. ..
19.230	.. ..	70 ..
20.750	.. ..	65 ..
20.760	50 ..	.. ..
20.818	**Turramurra**	
20.920	80 ..	.. ..
21.810	70 ..	.. ..
21.886	**Warrawee**	
22.315	.. ..	70 ..
22.774	**Wahroonga**	
23.000	.. ..	65 ..
24.100	50 ..	.. ..
24.208	**Waitara**	
24.740	.. ..	70 ..
24.840	40 ..	.. ..
25.090	.. ..	40 ..
25.115	X15 ..	*515A Pts*
25.150	X15 *516B*	X15 *516B*
25.255	**Hornsby**	

↓ Down sign on Up Shore
↑ Up sign on Down Shore

Section 6c
Waverton – North Sydney Car Sidings

KILO-METRAGE	DOWN Normal	DOWN XPT	UP Normal	UP XPT
6.110	**Waverton**			
6.410	25 ..		.. ..	
7.670	.. ..		40 ..	
7.845	**North Sydney CS**			

Section 7a
Strathfield – Hornsby

KILO-METRAGE	DOWN General	DOWN Medium	DOWN High	UP General	UP Medium	UP High
11.806	**Strathfield**					
12.145	*538A Pts*			X25 ..		..
12.162	60	60	60	.. ..		..
12.333	80	80	80	.. ..		..
12.333	..	..	..	60	60	60
12.837	..	..	..	70	70	70
13.382	**North Strathfield**					
13.559	80	115	115	.. ..		..
14.544	**Concord West**					
15.110	*584B Pts*			X80 ..		..
15.890	*50B Pts*			X75 ..		..
16.576	**Rhodes**					
16.718	..	..	..	80	115	115
16.817	80	115	115	.. ..		..
18.183	**Meadowbank**					
18.761	60	100	100	.. ..		..
18.761	..	..	..	60	115	115
18.910	..	..	..	X25 ..		..
19.196	**West Ryde**					
19.295	60	90	90	.. ..		..
19.295	X50 ..		..	.. ..		..
20.069	60	100	100	.. ..		..
20.155	**Denistone**					
20.678	..	..	..	60	90	90
21.392	**Eastwood**					
22.642	60	90	90	.. ..		..
23.004	..	..	..	60	80	80
23.030	X25 ..		..	104A Pts		
23.115	103B Pts			X35 ..		..
23.135	50	60	60	.. ..		..
23.230	X15 ..		..	105B Pts		
	Up sign on Down Main					
23.233	25	25	25	.. …		..
	Up sign on Down Main					
23.391	**Epping**					
23.475	X25 ..		..	107A Pts		
23.570	107B Pts			X25 ..		..
23.570	108 Pts			X15 ..		..
	Down sign on Up Main					
23.595	..	..	..	60	60	60
	Down sign on Up Main					
23.880	..	..	..	60	60	60
23.880	X60 ..		..	109 Pts		
24.089	60	60	60	.. ..		..
24.089	..	..	..	60	60	60
	Down sign on Up Main					
24.460	70	90	90	.. ..		..
24.563	113A Pts			X60 ..		..

	DOWN	UP
	Down sign on Up Main	
24.565	25 25 25 .. …	..
	Up sign on Down Main	
24.601	.. .. ..	60 80 80
24.695	X25	113B Pts
	Up sign on Down Main	
25.376	**Cheltenham**	
26.255	70 70 75	..
26.257	.. .. ..	60 90 90
26.904	**Beecroft**	
27.938	.. .. ..	60 70 75
27.948	80 80 85	..
28.266	80 115 115	..
28.579	**Pennant Hills**	
28.770	*51A Pts*	X40 .. ..
	On Up Relief	
29.431	**Thornleigh**	
29.820	*Up Relief*	40 40 40
29.947	*55B Pts*	X40 .. ..
29.947	.. .. ..	60 95 95
30.489	80 85 90	..
30.764	80 90 90	..
31.562	.. .. ..	80 95 95
31.720	**Normanhurst**	
31.811	80 80 80	..
32.818	X75	500A Pts
32.967	75 80 80	Down Relief
32.967	60 80 80	..
33.375	60 80 80	Down Relief
33.495	.. .. ..	80 80 80
33.539	X75	501B Pts
	Up sign on Down Main	
33.539	X25	502A Pts
33.864	**Hornsby**	

Section 7b
North Strathfield – Rhodes Relief Lines

KILO-METRAGE	DOWN General	DOWN Medium	DOWN High	UP General	UP Medium	UP High
12.528	55	55	60	..	..	..
12.750	*557B Pts* ↑			X50 ..		..
13.382	**North Strathfield**					
13.619	80	85	90	..	..	..
13.619	↑	↑	↑	55	55	55
13.873	..	..	..	55	55	55
14.544	**Concord West**					
14.726	↑	↑	↑	80	80	80
14.785	X80 ..		..	*581A Pts*		
15.753	..	..	..	75	75	75
16.503	70	70	75	..	..	..
16.576	**Rhodes**					
16.680	X70 ..		..	*53B Pts*		

↑ Up sign on Down Relief

Section 7c
West Ryde – Epping Suburban Lines

KILO-METRAGE	DOWN			UP		
	General	Medium	High	General	Medium	High
19.196	**West Ryde**					
19.204	..	..	..	60	80	90
19.401	60	75	80	..	..	..
20.127	60	85	90	..	..	..
20.155	**Denistone**					
21.314	60	65	70	..	..	..
21.392	**Eastwood**					
21.668	60	90	95	..	..	..
23.004	..	..	..	60	90	90
23.100	50	60	60	..	..	..
23.117	105A Pts			X15	..	..
	Down sign on Up Suburban					
23.391	**Epping**					

Section 7d
Epping – Thornleigh Down Relief

KILO-METRAGE	DOWN			UP		
	General	Medium	High	General	Medium	High
23.391	**Epping**			*Down Suburban*		
23.561	X60	..	..	*114 Pts Down Suburban*		
23.645	65	65	70	..	..	..
24.595	70	70	90	..	..	..
25.005	70	70	80	..	..	..
25.376	**Cheltenham**					
25.440	70	70	75	..	..	..
25.706	70	70	90	..	..	..
26.313	70	70	75	..	..	..
27.023	65	65	70	..	..	..
28.185	75	75	75	..	..	..
28.579	**Pennant Hills**					
29.115	X75	..	..	*52A Pts*		
29.431	**Thornleigh**			*Down Main*		

Section 8a
Central – Hurstville Illawarra Line

KILO-METRAGE	DOWN		UP	
	Normal	XPT	Normal	XPT
1.100	35	..	..	..
1.299	**Redfern**			
1.390	X25	..	..	..
1.510	..	..	35	..
2.213	**Illawarra Junction**			
2.300	..	..	50	..
2.360	..	..	X25	..
2.390	50	..	..	..
2.808	**Erskineville Junction**			
2.820	..	..	X25	..
2.881	**Erskineville**			
2.970	65	..	..	..
3.265	..	..	65	..
3.809	**St Peters**			
3.950	..	..	70	..
4.930	X25	..	..	..
5.040	..	..	80	..
5.308	**Sydenham**			
5.470	..	..	75	..
5.730	90	..	50	..
6.410	65	..	..	..
6.450	..	..	70	..

KILO-METRAGE	DOWN			UP		
	General	Medium	High	General	Medium	High
6.451	**Meeks Road Sth Jun**					
6.453	60	65	65	..	..	..
6.517	..	..	..	65	70	70
6.720	60	80	85	60	65	70
6.842	**Tempe**					
7.093	65	100	100	..	..	..
7.279	**Wolli Creek Jct**					
7.310	**Wolli Creek**					
7.445	X40	..	..	*755A Pts*		
8.350	65	75	80	..	..	..
8.420	**Arncliffe**					
8.610	..	..	..	60	70	70
8.687	65	100	100	..	..	..
9.510	60	80	80	..	..	..
9.604	**Banksia**					
9.763	..	..	..	60	90	95
10.200	60	60	65	..	..	..
10.406	**Rockdale**					
10.633	70	100	100	..	..	..
11.607	**Kogarah**					
11.746	70	80	85	60	100	100
12.741	**Carlton**					
13.534	70	75	80	..	..	..
13.692	**Allawah**					
14.265	X50	..	..	*980A Pts*		
14.370	..	..	..	60	80	85
14.680	60	80	80	🔻	🔻	🔻
14.837	**Hurstville**					
15.060	*985C Pts*			X50	..	..
15.178	60	75	80	..	..	..

🔻 Down sign on Up Main

Section 8b
Central – Hurstville Illawarra Local Line

KILO-METRAGE	DOWN		UP	
	Normal	XPT	Normal	XPT
0.000	**Central**			
0.814	60	..	..	..
0.885	..	..	50	..
1.299	**Redfern**			
1.610	..	..	60	..
2.213	**Illawarra Jun**			
2.808	**Erskineville Jun**			
2.881	**Erskineville**			
3.240	70	..	..	..
3.809	**St Peters**			
4.700	..	..	65	..
5.050	*734 Pts*		X25	..
5.100	55	..	..	..
5.113	735B Pts 🔺		X40	..
5.308	**Sydenham**			
5.405	..	..	55	..
5.432	X40	..	736A Pts	
5.497	736B Pts		X40	..
5.528	X40	..	740 Pts 🔻	
5.531	65	..	..	..
5.532	..	..	55	..
5.567	X25	..	742A Pts 🔻	
5.770	75			
6.325	..	..	65	..
6.410	65	..	..	..

KILO-METRAGE	DOWN			UP		
	General	Medium	High	General	Medium	High
6.451	**Meeks Rd South Jun**					
6.480	*747B Pts*			X15	..	..
6.480	..	..	..	55	55	55
6.540	X15	..	..	*749A Pts*		
6.555	50	50	50	..	..	..
6.660	65	70	75	60	65	70
6.842	**Tempe**					
7.172	65	85	85	..	..	..
7.218	..	..	..	60	75	80
7.270	X35	..	..	*753 Pts*		
7.279	**Wolli Creek Jct**					
7.645	*756B Pts*			X40	..	..
8.140	..	..	..	60	80	80
8.420	**Arncliffe**					
8.501	..	..	..	60	60	60
9.604	**Banksia**					
9.740	65	80	80	..	..	..
10.210	..	..	..	60	80	85
10.406	**Rockdale**					
10.501	..	..	..	60	80	80
10.583	70	80	85	..	..	..
11.607	**Kogarah**					
12.741	**Carlton**					
13.692	**Allawah**					
14.260	X50	..	..	*981A Pts*		
14.323	..	..	..	60	80	85
14.370	55	55	65	..	..	..
14.600	50	50	50	🔻	🔻	🔻
14.622	..	..	..	55	55	65
14.695	*982B Pts* 🔺			X25	..	..
14.710	..	..	..	45	45	50
14.837	**Hurstville**					
14.890	..	..	..	50	50	50
14.950	X50	..	..	*988A Pts*		
15.554	..	..	..	50	50	55
15.565	X50	..	..	*991B Pts* 🔻		

🔻 Down sign on Up Local
🔺 Up sign on Down Local

Section 8c
Hurstville – Waterfall

KILO-METRAGE	DOWN			UP		
	General	Medium	High	General	Medium	High
14.837	**Hurstville**					
15.661	..	..	..	60	70	75
15.665	*991B Pts*			X50	..	..

KILO-METRAGE	DOWN			UP		
	General	Medium	High	General	Medium	High
16.125	**Penshurst**					
16.760	X25			*1080A Pts*		
16.835	*1080B Pts*			X25	..	..
16.903	..	..	..	80	85	90
17.095	**Mortdale**			..	..	..
17.060	55	55	65	..	..	..
17.110	X25	..	..	*1082A Pts*		
17.208	55	55	65	..	..	..
17.210	X35	..	..	*1084A Pts*		
17.300	..	..	..	80	80	80
18.063	65	65	65	..	..	..
18.081	..	..	..	75	75	85
18.105	*1096B Pts*			X25	..	..
18.282	**Oatley**					
18.535	80	80	85	..	..	..
18.535	..	..	..	70	70	75
19.438	80	100	110	..	..	..
19.438	..	..	..	75	80	85
20.643	80	85	90	..	..	..
20.711	..	..	..	80	100	100
21.080	..	...	..	65	85	85
21.103	80	80	90	..	..	..
21.237	**Como**					
21.371	70	70	75	..	..	..
21.916	80	90	90	..	..	..
21.916	..	..	..	65	70	75
22.546	..	..	..	65	95	100
22.723	**Jannali**					
23.319	70	70	70	..	..	..
24.388	X40	..	..	*151A Pts*		
24.641	**Sutherland**					
24.726	80	90	90	..	..	..
25.800	*167B Pts*			X25	..	..
26.288	**Loftus**					
26.368	85	85	95	..	..	..
26.368	..	..	..	65	100	100
27.327	100	115	115	..	..	..
27.327	..	..	..	65	85	95
28.392	..	..	..	70	85	95
30.753	**Engadine**					
31.990	85	100	110	..	..	..
32.306	100	100	110	..	..	..
32.306	..	..	..	80	115	115
33.020	100	115	115	..	..	..
33.020	..	..	..	80	100	110
33.153	**Heathcote**					
36.302	70	95	95	..	..	..
36.700	X50	..	..	*47A Pts*		
36.850	50	50	50	*Down Refuge*		
37.574	70	80	80	..	..	..
37.725	X50	..	..	🡻 *52A Pts*		
37.800	*52A Pts*			X50	*Up Refuge*	
37.895	50	50	50	🡻*Up Refuge*		
37.895	*52B Pts*			X50	*Up Refuge*	
38.200	45	45	45	🡻*Up Refuge*		
38.200	Up Refuge			50	50	50
38.207	..	..	..	80	115	115
38.652	40	55	60	..	..	..
38.741	**Waterfall**					

🡻 Down sign on UP Main.
🡹 Up sign on Down Main.

Section 8d
Hurstville – Sutherland Bi-directional – Illawarra Line

KILO-METRAGE	DOWN MAIN UP Direction			UP MAIN Down Direction		
	General	Medium	High	General	Medium	High
14.950	..	..	..	60	65	65
15.060	*988A Pts*			X50	..	..
15.090	..	..	..	60	75	80
15.090	*989A Pts*			X35	..	..
15.155	X50	..	..	*988B Pts*		
15.660	60	70	75	..	..	..
15.665	*992A Pts*			X50	..	..
15.830	X50	..	..	*992B Pts*		
16.125	**Penshurst**					
16.860	*1081A Pts*			X15	..	..
16.900	70	70	75	..	..	..
16.950	X15	..	..	*1081B Pts*		
16.970	..	..	..	55	55	65
17.059	**Mortdale**					
17.125	*1083A Pts*			X40	..	..
17.203	..	..	..	55	55	65
17.210	X40	..	..	*1083B Pts*		
17.383	55	55	65	..	..	..
18.065	75	75	80	..	..	..
18.081	..	..	..	70	70	75
18.081	*1098A Pts*			X15	..	..
18.170	X15	..	..	*1098B Pts*		
18.282	**Oatley**					
18.535	65	65	65	80	80	85
19.438	75	80	85	80	100	110
20.643	..	..	..	80	85	90
20.711	80	100	100	..	..	..
21.080	65	85	85	70	70	75
21.237	**Como**					
21.916	65	70	75	80	90	90
22.546	65	95	100	..	..	..
22.723	**Jannali**					
23.318	..	..	..	70	70	70
24.270	*150A Pts*			X40	..	..
24.388	60	85	95	..	..	..
24.388	X40	..	..	*150B Pts*		
24.410	*152A Pts*			X40	..	..
24.500	X40	..	..	*152B Pts*		
24.641	**Sutherland**					
24.726	60	85	85	..	..	..

Section 8e
Eveleigh Yard

KILO-METRAGE	DOWN		UP	
	Normal	XPT	Normal	XPT
*2.197	⊗ 8	..	..	..
*2.233	..	..	⊗ 8	..
*2.353	⊗ 8	..	..	..
*2.394	..	..	⊗ 8	..

* Overhead wiring mast number.
⊗ Level crossing sign *NGE 216 Level crossings.*

Section 9
Sutherland - Cronulla

KILO-METRAGE	DOWN			UP		
	General	Medium	High	General	Medium	High
24.460	*151A Pts*			X40	..	..
	On Back Platform Road					
24.641	**Sutherland**					
24.690	X25	..	..	*155A Pts*		
24.885	35	..	..	..	..	..
25.005	*159A Pts*			X35	..	..
25.015	55	..	..	..	..	..
25.535	80	..	..	..	..	..
25.540	..	..	..	55	..	..
26.310	..	..	..	75	..	..
26.475	65	..	..	..	..	..
26.680	..	..	..	65	..	..
26.694	**Kirrawee**					
26.795	80	..	..	..	..	..
27.944	**Gymea**					
29.509	**Miranda**					
31.509	**Caringbah**					
31.885	100	..	..	..	..	..
31.950	..	..	..	80	...	..
33.405	65	..	..	..	..	..
33.410	..	..	..	100	..	..
33.601	**Woolooware**					
34.160	45	..	..	..	..	..
34.160	X45	..	..	*51A Pts*		
34.375	..	..	..	65	..	..
34.375	45	..	..	🡻	..	..
34.375	*52B Pts* 🡹			X45	..	..
34.560	🡹	..	..	45	..	..
34.625	25	..	..	🡻	..	..
34.680	..	..	..	45	..	..
34.745	8	..	..	..	..	..
	Yard Speed Sign for 1, 2, 3 Sdgs					
34.790	..	..	..	35	..	..
34.808	**Cronulla**					

🡻 Down sign on UP Main.
🡹 Up sign on Down Main.

Section 10
Erskineville Junction – Bondi Junction

KILO-METRAGE	UP ILLA RELIEF		DOWN ILLA RELIEF	
	Normal	XPT	Normal	XPT
3.108+	**Erskineville Jun**			
2.970+	..	..	X25	..
2.870+	..	..	45	..
2.760+	60	..	..	..
1.299+	**Redfern**			
	DOWN ESR		**UP ESR**	
0.100	**Central**			
0.770	..	..	60	..
0.920	50	..	..	..
1.176	**Town Hall**			
1.390	..	..	50	..
1.560	60	..	..	..
2.102	**Martin Place**			
3.410	**Kings Cross**			

4.530	60	..	..	..
4.823	**Edgecliff**			
5.000	50	..	60	..
6.000	60	..	50	..
6.340	..	..	60	..
6.444	X35	..	*908 Pts*	
6.640	..	..	60	..
6.665	X25	..	*911 Pts*	
	Up Sign on Down ESR			
6.757	**Bondi Junction**			

+ Kilometrage via ESR from Central.

Section 11
Sydenham – Regents Park

KILO-METRAGE	DOWN		UP	
	Normal	XPT	Normal	XPT
5.308	**Sydenham**			
5.499	741B Pts		X35	..
5.587	40	..	..	..
5.622	800B Pts		X35	..
6.040	70	..	..	..
6.250	..	..	40	..
6.575	**Marrickville**			
7.540	..	..	70	..
7.750	60	..	..	..
7.872	**Dulwich Hill**			
8.797	**Hurlstone Park**			
10.020	..	..	60	..
10.163	**Canterbury**			
10.360	65	..	..	..
11.340	X50	..	*262 Points*	
11.697	**Campsie**			
12.270	X50	..	*264 Points*	
	Down sign on Up Bankstown line			
13.000	..	..	65	..
13.140	40	..	..	..
13.250	**Belmore**			
13.400	..	..	40	..
13.580	80	..	..	..
14.200	..	..	80	..
14.340	60	..	..	..
14.481	**Lakemba**			
14.640	..	..	50	..
14.800	80	..	..	..
15.346	**Wiley Park**			
16.290	65	..	80	..
16.447	**Punchbowl**			
16.880	..	..	65	..
17.020	80	..	..	..
18.600	..	..	80	..
18.715	**Bankstown**			
18.750	..	..	60	..
18.813	40	..	..	..
18.860	..	..	60	..
19.140	55	..	..	..
19.546	65	..	..	..
20.060	..	..	60	..
20.556	**Yagoona**			
22.106	**Birrong**			
22.130	..	..	65	..
22.290	50	..	..	..
22.640	..	..	50	..
22.670	X35	..	*201B Pts*	
22.750	X10	X25MU	*203 Pts*	
22.765	**Sefton Park East Junction**			

KILO-METRAGE	DOWN		UP	
	Normal	XPT	Normal	XPT
22.765	*202 Pts*		X25	..
22.825	*204 Pts*		X35	..
22.872	25	40MU	..	..
23.274	X25	..	*208 Pts*	
23.290	..	..	40	..
23.392	**Sefton Park North Junction**			
20.062	**+Sefton Park North Junction**			
	+ Via Lidcombe			

Section 12
Central – Wolli Creek (Airport Line)

KILO-METRAGE	DOWN		UP	
	Normal	XPT	Normal	XPT
0.100	**Central**			
0.183	45	..	..	..
	Airport Turnback			
0.270	X55	..	*636 Points*	
0.271	..	..	25	..
	Up Sign on Airport Turnback			
0.271	X45	..	..	..
	Airport Turnback			
0.353	*635B Pts*		X40	..
0.390	..	..	X45	..
	Up Sign on Dwn Airport			
0.420	..	..	45	..
0.432	80	..	..	..
0.896	..	..	80	..
	Up Sign on Down Airport			
1.052	*850B Pts*		X75	..
2.000	60	..	..	..
2.070	..	..	80	..
2.714	**Green Square**			
3.172	80	..	..	..
3.565	..	..	60	..
4.935	..	..	80	..
5.105	60	..	..	..
5.191	**Mascot**			
5.275	..	..	60	..
5.445	80	..	..	..
6.480	..	..	80	..
6.655	60	..	..	..
6.743	**Domestic**			
6.825	..	..	60	..
7.000	80	..	..	..
7.935	..	..	80	..
8.110	60	..	..	..
8.271	**International**			
8.404	..	..	60	..
8.460	80	..	..	..
9.024	..	..	80	..
9.200	60	..	..	..
9.489	**Wolli Creek**			
9.680	..	..	60	..
9.855	80	..	..	..

Section 13
Wolli Creek Junction – Glenfield

KILO-METRAGE	DOWN			UP		
	General	Medium	High	General	Medium	High
7.279	**Wolli Creek Jct**					
7.361	*754 Pts*			X50	..	..
7.450	..	..	..	50	50	55
7.528	50	50	55	..	..	..
7.829	80	80	85	..	..	..
8.213	X70	..	..	*501A Pts*		
8.220	..	..	..	80	80	85
8.343	80	80	85	..	..	..
8.618	*504B Pts*			X70	..	..
8.633	**# Turrella**					
9.276	60	80	85	80	80	90
9.867	80	80	85	..	..	..
9.902	..	..	..	60	80	90
10.095	**# Bardwell Park**					
11.368	**# Bexley North**					
11.679	..	..	..	80	80	90
11.745	80	100	115	..	..	..
12.624	**# Kingsgrove**					
13.160	60	100	115	..	..	..
13.902	..	..	..	80	100	115
13.964	X60	..	..	*511A Pts*		
14.589	..	..	..	60	100	115
14.646	**# Beverly Hills**					
14.733	60	100	110	..	..	..
15.302	..	..	..	60	95	105
15.533	60	100	100	..	..	..
15.785	**# Narwee**					
16.153	..	..	..	60	100	105
16.339	60	115	115	..	..	..
17.497	**# Riverwood**					
17.752	60	105	110	..	..	..
18.131	..	..	..	60	100	110
18.138	60	115	125	..	..	..
18.805	..	..	..	60	115	125
19.340	**# Padstow**					
20.230	80	115	125	..	..	..
20.306	..	..	..	80	115	125
20.430	*51B Pts*			X60	..	..
20.964	**Revesby**					
21.392	80	105	115	60	115	115
21.663	*55B Pts*			X60	..	..
21.700	80	105	115	..	..	..
21.992	..	..	..	70	115	115
22.554	**Panania**					
23.560	..	..	..	80	115	115
23.647	X25	..	..	*31A Pts*		
23.880	80	115	115	..	..	..
23.882				X25	..	..
	On Up Terminal Road					
24.028	**East Hills**					
26.755	**Holsworthy**					
31.303	80	105	115	..	..	..
31.360	..	..	..	80	115	115
32.200	*Glenfield North Jct*					
%41.081	*Glenfield North Jct*					
%41.082	60	100	100	..	..	..
%41.095	X60	..	..	*50A Pts*		
%41.359	..	..	..	80	80	80
%41.359	*52B Pts*			X60	..	..
%41.560	60	100	100	..	..	..

	DOWN			UP		
%41.813	..	..	..	60	80	80
%41.925	**Glenfield**					
%42.017	X60	..	..	*62A Pts*		
%42.020	..	..	..	60	60	80
%42.100	*61 Pts*			X60	..	..
%42.112	60	75	75	..	..	..
%42.240	..	..	..	60	60	60
%42.540	..	..	..	60	75	75
%42.592	X75	..	..	*57 Pts*		
%42.670	*Glenfield South Jct*					

No platforms on Main lines.
% Kilometrage via Main South.

Section 13a Turrella – Revesby Local Line

KILO-METRAGE	DOWN			UP		
	General	Medium	High	General	Medium	High
8.380	*502B Pts*			X70	..	..
8.388	X70	..	..	*503A Pts*		
8.544	60	80	85	..	..	..
8.633	**Turrella**					
9.900	..	..	..	60	80	85
10.095	**Bardwell Park**					
11.368	**Bexley North**					
12.624	**Kingsgrove**					
12.793	X25	..	..	*508A Pts*		
12.800	..	..	..	80	80	85
13.160	70	100	115	..	..	..
13.902	..	..	..	80	100	115
14.194	*512B Pts*			X75	..	..
14.646	**Beverly Hills**					
14.733	70	80	85	..	..	..
15.785	**Narwee**					
15.880	..	..	..	60	85	90
16.153	..	..	..	60	95	100
16.339	60	90	100	..	..	..
17.497	**Riverwood**					
17.900	..	..	..	60	100	110
18.547	70	110	115	..	..	..
19.340	**Padstow**					
20.008	..	..	..	20	100	110
20.133	60	60	60	..	..	..
20.335	X60	..	..	*52A Pts*		
20.574	X45 🡻		..	*53A Pts*		
20.700	*53B Pts*			X45 🡹		
20.835	*54B Pts*			X45	..	
20.964	**Revesby**					
21.392	..	..	..	60	80	80
21.414	X60	..	..	*56B Pts*		

🡻 Down sign on Up Local.
🡹 Up sign on Down Local.

Section 14a Metropolitan Freight Lines

KILO-METRAGE	DOWN		UP	
	Normal	XPT	Normal	XPT
ARTC Boundary – Flemington West Junction				
18.909	**ARTC Boundary**			
19.000	..	.	70	..
19.160	50	..	..	..
19.440	..	..	50	..
19.785	35	..	X40	..
	Up Sign Dwn Gds			
19.790	X30	..	*694 Dia onto DN Enfield East Fork*	
19.813	**Flemington South Jun**			
19.870	*694 Dia onto UP Goods*		X30	..
20.334	**Flemington West Jun**			

Section 14d Metropolitan Freight Lines

KILO-METRAGE	DOWN		UP	
	Normal	XPT	Normal	XPT
ARTC Boundary - Sefton Park Junction				
21.285	**ARTC Boundary**			
21.330	..	..	80	..
21.410	X50	..	*201A Pts*	
21.410	50	..	..	..
21.585	X30	..	*201B Pts*	
21.635	..	..	25	..
21.658	**Sefton Park East Junction**			
21.730	50	..	..	..
21.780	*204 Pts*		X25	X35MU
22.245	X50	..	*210 Pts*	
22.270	**Sefton Pk South Jn**			

Section 14e Metropolitan Freight Lines

KILO-METRAGE	DOWN		UP	
	Normal	XPT	Normal	XPT
Flemington Goods Junction - Flemington South Junction				
Down Goods				
14.630	40	..	35	..
14.670	X20	..	..	..
14.750	..	..	X20	..
15.100	X35	..	40	..
15.190	40	..	..	..
Flemington Middle Jun				
<19.850	..	..	X35	..
NOTE: At Middle Junction the Down Flemington Goods becomes Up Enfield East Fork.				
Up Enfield East Fork				
<19.813	**Flemington Sth Jun**			
18.909	**ARTC Boundary**			
Flemington Car Sheds Transfer Road				
14.800	..	..	X20	..
640 crossover				
Up Goods				
14.615	X20	..	..	..
14.630	40	..	20	..
15.170	X35	..	..	..
15.190	35	..	..	..
15.205	..	..	X35	..
15.235	..	..	X35	..
15.290	..	..	35	..
15.330	X35	..	35	..
Flemington Middle Jun				
15.465	X35	..	..	..
15.680	*694 Dia onto DN Goods*		X30	..
NOTE: At Middle Junction the Up Flemington Goods becomes Down Enfield East Fork.				

< Km from ARTC Boundary

Section 14f Metropolitan Freight Lines

KILO-METRAGE	DOWN		UP	
	Normal	XPT	Normal	XPT
North Strathfield Junction – Flemington Markets Junction				
#12.744	**North Strathfield Jun**			
*12.210	*557A Pts*		X50	..
*12.240	50	..	..	..
*13.735	35	..	50	..
Up Goods 625 crossover				
*13.810	20	..	..	..
*14.770	**Flemington Mkts Jun**			
For speed signs Markets Junction to East Junction see Section 14g.				
For speed signs East Junction to South Junction see Section 14e.				

* Main Suburban kilometrage.
# Main North kilometrage.

Section 14g Metropolitan Freight Lines (including Olympic Park)

KILO-METRAGE	DOWN		UP	
	Normal	XPT	Normal	XPT
Flemington Goods Junction - Olympic Park				
^14.567	**Flemington Gds Jun**			
(1)14.595	..	..	X35	..
(1)14.650	35	..	..	..
(1)14.910	40	..	..	..
(1)15.390	..	..	40	..
(1)15.610	50	..	..	..
15.840	**Flemington Nth Jun**			
(2)15.850	X30	..	..	..
(2)15.880	..	..	X50	..
(2)16.040	50	..	..	..
(2)16.920	X50	..	..	..
(3)17.230	40	..	..	..
(4)17.230	40	..	..	..
17.330	**Olympic Park**			
(3)17.640	50	..	..	..
(4)17.640	50	..	..	..
(4)17.640	X50	..	..	..
15.840	**# Flemington Nth Jun**			
(5)15.785#	..	..	X50	..
(6)15.780#	50	..	..	..
(5)15.530#	..	..	X40	..
(5)14.870#	..	..	50	..
(6)15.050%	40	..	..	..

KILO-METRAGE	DOWN		UP	
	Normal	XPT	Normal	XPT
(5)15.070%	35	..	..	..
(5)15.145%	..	..	X40	..
(7)15.285%	X35	..	35	..
(5)15.330%	..	..	40	..
(6)15.350%	X35	..	X35	..
(8)15.390	..	..	X35	..
(8)15.490	50	..	..	..
(8)15.815	X45	..	50	..
(9)15.905	..	..	50	..
(9)15.925	X20	..	X40	..
(8)15.960	X35	X40MU		
16.030	**Flem West Jun**			
(9)16.050	..	..	X35	X40MU
(8)16.090	X35	X40MU	..	..
Lidcombe Shuttle Road				
15.995	..	..	X35	..
16.020	20	..	..	..
16.330	..	..	20	..

#Km via H'bush Bay East Fork.
%Km via H'bush Bay Line.
(1) Homebush Bay East Fork.
(2) Homebush Bay Loop.
(3) Inner Platform Road.
(4) Outer Platform Road.
(5) Up Homebush Bay West Fork.
(6) Down Homebush Bay West Fork.
(7) Homebush Bay connection.
(8) Down Homebush Bay Line.
(9) Up Homebush Bay Line.

Section 15
Glenfield - Leppington

KILO-METRAGE	DOWN		UP	
	Normal ↓	Up signs ↑	Normal ↑	Down signs ↓
41.925	**Glenfield**			
42.017	X45	..	*60A Pts* #	..
42.017	X60	..	*62A Pts* %	..
42.200	75	*63B Pts*	X60	..
42.910	115	..	75	..
45.040	95	..	115	..
45.390	**Edmondson Park**			
45.620	115	..	..	..
50.293	60	..	..	..
50.293	X60	*200A Pts*	..	..
50.430	..	..	115	60
50.740	*201B Pts*	*X60*	..	..
51.057	**Leppington**			
51.390	60	60	..	..
51.511	*204 Pts*	X60	X60	*205 Pts*
52.290	X40	*210A Pts*	*209A Pts*	X40
52.539	*209B Pts*	X40	X40	*210B Pts*
52.705	13	..	..	13
52.705	X13	*211A Pts*	*212A Pts*	X13
52.710	..	60	60	..
53.000	All Sidings	25	25	*All Sidings*

Down Main South.
% Down East Hills.

Section 15a
Glenfield – Leppington (Loop Lines)

KILO-METRAGE	DOWN		UP	
	Normal ↓	Up signs ↑	Normal ↑	Down signs ↓
50.293	X60	*200A Pts*	..	..
50.740	*203 Pts*	X60	X60	*202 Pts*
51.057	**Leppington**			
51.390	X60	*204 Pts*	*205 Pts*	X60
51.511	..	..	X60	*205 Pts*

Section 17

Passenger train operating conditions

17. Passenger train operating conditions

Version August 2021

Introduction

This section of the Train Operating Conditions Manual contains specific operating conditions for passenger trains which include Sydney Trains, NSW TrainLink, privately owned diesel railcars, heritage trains and locomotive hauled trains.

Sydney Trains and NSW TrainLink

As Sydney Trains and NSW TrainLink operate similar types of rolling stock, the following sections refer to both Sydney Trains and NSW TrainLink.

Designation of rolling stock

All rolling stock have been classified as **Narrow, Sub-Medium, Medium, Extended Medium or Wide gauge** rolling stock as outlined TOC Manual, General Instructions, Section 10 Locomotive and Rolling Stock Data.

In Table 5 and Table 6 - Maximum speed of Sydney Trains and NSW TrainLink rolling stock (pp 100-101) the various sections of track have designated **Narrow, Sub-Medium, Medium, Extended Medium or Wide gauge.** Table 4 shows details the profile track gauge groups.

Table 4 – Profile Track Gauge Groups and Speeds

PROFILE	# GROUP	MAX SPEED	DESIGN SPEED	AREA OF OPERATION
Narrow gauge rolling stock	1 & 6	115	115	may run on Narrow, Medium, Extended medium or Wide gauge track areas
Medium width gauge rolling stock	2	115	115	may run on Medium, Extended medium or Wide gauge track areas
Medium width gauge rolling stock	3	130	130	may run on Medium, Extended medium or Wide gauge track areas
Medium width gauge rolling stock	3a	* 115	* 130	may run on Medium, Extended medium or Wide gauge track areas
Sub-Medium width gauge rolling stock	3b	% 130	% 160	May run on Sub-Medium, Medium, Extended Medium or Wide gauge track areas
Extended Medium gauge rolling stock	4	115	115	may only run on Extended medium or Wide gauge track areas or where authorised herein or other authority i.e. TOC Waiver
Wide gauge rolling stock	5	80	80	may only run on Wide gauge track areas with a further restriction of 20km/h through **ALL PLATFORMS** (unless otherwise specified in TOC Waiver authority)

 # For group categories, refer to General Instructions, Section 10 Locomotive and Rolling Stock Data.

** Maximum speed limited to 115 km/h compared to the design speed of 130 km/h, refer to Speed signs - maximum kilometres per hour in this section for further details.*

% Maximum speed limited to 130 km/h compared to the design speed of 160 km/h, refer to Speed signs - maximum kilometres per hour in this section for further details.

For trains requiring to run in areas outside their rolling stock boundaries (e.g. rolling stock transfers, special working etc.), permission shall be obtained from Director Fleet Engineering, Asset Management Branch and all special requirements necessary for the movement are to be included on a Special Train Notice or 'Tables' telegram. The following table includes certain authorised working for special movements (e.g. movement of nominated Extended Medium gauge rolling stock Sydney - Broadmeadow).

Speed signs - maximum kilometres per hour

Speed signs indicate the maximum speed permitted between a speed sign and the next in advance. Drivers shall make sure that the front of the train passes a sign at or below the speed given by the sign.

If speed signs allow an increase in speed, Drivers shall not increase speed until the rear of the train has passed the speed sign. (Sydney Trains Network Rule *NSG 604 Indicators and signs*).

The maximum speed through the curved portion of the turnout is ***25 km/h*** unless otherwise shown. An 'X' speed sign applies to crossovers and turnouts, e.g. X30.

A white background speed sign with the letters "MU" alongside the numerals, by itself or under a yellow background speed sign, applies to XPT, Xplorer, Endeavour, Hunter trains and Multiple Unit trains (Sydney Trains Network Rule *NSG 604 Indicators and signs*).

Speed signs - Endeavour / Hunter / Xplorer Trains

Endeavour / Hunter / Xplorer trains are to run to normal or general speed signs (black numbers on a yellow background). Where Multiple Unit or Medium speed signs are provided (black MU numbers on a white background or white numbers on blue background) Endeavour / Hunter / Xplorer trains will run to these speed signs up to a maximum speed of 115 km/h. Where XPT or High speed signs are provided (black numbers on a white background), Endeavour / Hunter / Xplorer trains will run to these speed signs up to a maximum speed of 145 km/h.

Speed signs – OSC (Outer Suburban Cars)

OSC trains are to run to normal or general speed signs (black numbers on a yellow background). Where Multiple Unit or Medium speed signs are provided (black MU numbers on a white background or white numbers on blue background) OSC trains will run to these speed signs up to a maximum speed of 115 km/h. Where XPT or High speed signs are provided (black numbers on a white background) OSC trains will run to these speed signs up to a maximum speed of 130 km/h.

Speed signs – Millennium / Waratah / Waratah Series 2 (SGT)

Millennium / Waratah / Waratah 2 trains are to run to normal or general speed signs (black numbers on a yellow background). Where Multiple Unit or Medium speed signs are provided

(black MU numbers on a white background or white numbers on blue background) Millennium / Waratah / Waratah 2 trains will run to these speed signs up to a maximum speed of 115 km/h.

Speed signs – Mariyung (NIF – New Intercity Fleet)

Mariyung trains are to run to normal or general speed signs (black numbers on a yellow background). Where Multiple Unit or Medium speed signs are provided (black MU numbers on a white background or white numbers on blue background) Mariyung trains will run to these speed signs up to a maximum speed of 115 km/h. Where XPT or High speed signs are provided (black numbers on a white background) Mariyung trains will run to these speed signs up to a maximum speed of 130 km/h. A maximum speed of 100km/h is in place for Mariyung on the Main West (Emu Plains – Lithgow) refer to Table 5 and Table 6 - Maximum speed of Sydney Trains and NSW TrainLink rolling stock.

Maximum speed of Sydney Trains and NSW TrainLink rolling stock

Table 5 and Table 6 - Maximum speed of Sydney Trains and NSW TrainLink rolling stock (pp 100-101) show the maximum speed of Sydney Trains and NSW TrainLink rolling stock over the various sections of lines. These speeds are subject to permanent speed signs and temporary speeds that may be in force.

The approval applies to Down and Up directions unless specified.

Where speeds are shown in the following table, these are to be taken as authority for these trains to operate on the designated section of line.

Where the letters N/A are shown, trains are not permitted to travel over that section of line under normal conditions. When the letters N/A are shown and a train is required to travel over that section of line, permission shall be obtained from Director Fleet Engineering, Asset Management Branch before the movement commences.

Table 5 - Maximum speed of Sydney Trains and NSW TrainLink rolling stock

AREA / SECTION	TRACK WIDTH CLASS	ELEC-TRIFIED	SPEED-SIGNS Y/N	INTER-CITY		SUBURBAN				DIESEL RAILCARS				NOTES Locality working
Train Type ⇨				Double Deck	Double Deck	Double Deck	Double Deck	Double Deck	Double Deck	Single Deck	Endea-vour / Xplorer	Hunter	XPT	
Train Width ⇨				Narrow	Sub Medium	Medium	Medium	Medium	Extended Medium	+Wide	Narrow	Narrow	Narrow	
++ Group				1	3b	2	3	3a	4	5	6	6		
City Circle														
CENTRAL – CIRCULAR QUAY – CENTRAL – City Inner and Outer	Wide*	Yes	Yes	40	N/A	40	40	40	40*	40*	40	N/A	N/A	1a
Sydney to Lithgow														
SYDNEY <> GRANVILLE – Main	Wide	Yes	Yes	100	100	100	100	100	100	80	100	100	100	
GRANVILLE <> ST MARYS –West Sub/Sub	Wide	Yes	Yes	115	115	115	115	115	115	80	115	115	115	
CENTRAL <> GRANVILLE – Suburban	Wide	Yes	Yes	80	80	80	80	80	80	80	80	80	80	
GR'VILLE <> ST MARYS – West Main/Main	Wide	Yes	Yes	115	115	115	115	115	115	80	115	115	115	
CENTRAL <> HOMEBUSH – Local	Wide	Yes	Yes	75	75	75	75	75	75	75	75	75	75	
ST MARYS <> EMU PLAINS	Wide	Yes	Yes	115	115	115	115	115	115	80	115	115	115	
EMU PLAINS <> SPRINGWOOD	Medium	Yes	Yes	85	85	85	85	85	N/A	N/A	85	85	85	
SPRINGWOOD <> MT VICTORIA	Medium	Yes	Yes	100	100	100	100	100	N/A	N/A	115	115	115	
MT VICTORIA <> LITHGOW	Sub-Medium	Yes	Yes	100	N/A	N/A	N/A	N/A	N/A	N/A	110	110	110	
Power House Museum Siding	Narrow	No	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10	10	N/A	
Regent Street- Mortuary Platform	Wide	No	No	10	N/A	10	10	10	10	10	10	10	N/A	
Eveleigh > Redfern – Up Engine Dive	Wide	Yes	Yes	15	15	15	15	15	15	15	15	15	15	
Redfern – Illawarra Dives	Wide	Yes	Yes	30	30	30	30	30	30	30	30	30	30	
Clyde														
CLYDE <> PARRAMATTA RD	Wide	No	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10	10	10	
Blacktown to Richmond														
BLACKTOWN <> RICHMOND	Wide	Yes	Yes	115	N/A	115	115	115	115	80	115	N/A	115	
SEVEN HILLS > BLACKTOWN >- Down Branch	Wide	Yes	Yes	70	N/A	70	70	70	70	70	70	N/A	70	
Lidcombe/Granville to Macarthur														
GRANVILLE <> CABRAMATTA	Wide	Yes	Yes	100	N/A	100	100	100	100	80	100	100	100	
LIDCOMBE <> MACARTHUR (Via Regents Prk)	Wide	Yes	Yes	115	N/A	115	115	115	115	80	115	115	115	
Lidcombe < > Loop Line	Wide	Yes	Yes	15	N/A	15	15	15	15	15	15	15	15	
Granville < > Y Link	Wide	Yes	Yes	70	N/A	70	70	70	70	70	70	70	70	
Central to Hornsby (Via North Shore)														
CENTRAL <> NORTH SYDNEY	Wide	Yes	Yes	60	60	60	60	60	60	60	60	N/A	60	1a
NORTH SYDNEY <> HORNSBY	Wide	Yes	Yes	80	80	80	80	80	80	80	80	80	80	
Waverton <> North Sydney Car Sidings	Wide	Yes	Yes	40	40	40	40	40	40	40	40	40	N/A	
Strathfield to Newcastle Interchange														
STRATHFIELD <> COWAN (Main)	Wide	Yes	Yes	115	115	115	115	115	115	80	115	115	115	
COWAN <> Newcastle Interchange	Medium	Yes	Yes	115	130(7a)	115(7a)	130(7a)	115(7a)	115(7b)	N/A	145	145	160	7a, 7b
Strathfield < > Nth Strathfield – Flyover	Wide	Yes	No	40	40	40	40	40	40	40	40	40	40	
Rhodes>Nth Strathfield – Up Relief / NSRU	Ext Med	Yes	Yes	80	80	80	80	80	80	N/A	80	80	80	
North Strathfield < > Rhodes – Down Relief	Wide	Yes	Yes	85	90	85	90	85	85	80	90	90	90	
West Ryde > Epping – Down Suburban	Wide	Yes	Yes	90	95	90	95	90	90	80	95	95	95	
Epping > West Ryde – Up Suburban	Wide	Yes	Yes	90	90	90	90	90	90	80	90	90	90	
Epping>Thornleigh – Down Relief	Ext Med	Yes	Yes	75	90	75	90	75	75	N/A	90	90	90	
Thornleigh > Pennant Hills – Up Relief	Wide	Yes	No	50	50	50	50	50	50	50	50	50	50	
Berowra > Down Relief	Wide	Yes	Yes	50	50	50	50	50	50	50	50	50	50	

\+ See *Sydney Metropolitan area - operation of wide gauge rolling stock* (page 102) re operation of Wide Gauge rolling stock in the Metropolitan area.

++ Refer to Section General Instructions, Section 10 Locomotive and Rolling Stock Data for group categories.

* Circular Quay station restricted to Medium and Narrow rolling stock widths only, Wide and Extended Medium Rolling Stock not permitted through Circular Quay.

For all operational requirements outside the TfNSW Metropolitan Heavy Rail network, refer to the CRN and ARTC Train Operating Conditions Manuals.

Table 6 - Maximum speed of Sydney Trains and NSW TrainLink rolling stock

AREA / SECTION	TRACK WIDTH CLASS	ELEC-TRIFIED	SPEED-SIGNS Y/N	INTER-CITY		SUBURBAN				DIESEL RAILCARS				NOTES Locality working
Train Type ⇨				Double Deck	Double Deck	Double Deck	Double Deck	Double Deck	Double Deck	Single Deck	Endea-vour / Xplorer	Hunter	XPT	
Train Width ⇨				Narrow	Sub Medium	Medium	Medium	Medium	Extended Medium	+Wide	Narrow	Narrow	Narrow	
++Group				1	3b	2	3	3a	4	5	6	6		
Sydney to Port Kembla/Bomaderry														
CENTRAL <> HURSTVILLE - Illawarra Line	Wide	Yes	Yes	100	100	100	100	100	100	80	100	100	100	
CENTRAL <> HURSTVILLE - Illawarra Local	Wide	Yes	Yes	80	85	80	85	80	80	80	85	85	85	
HURSTVILLE <> HELENSBURGH	Wide	Yes	Yes	115	115	115	115	115	115	80	115	115	115	
HELENSBURGH <> PORT KEMBLA	Medium	Yes	Yes	115	115	115	115	115	N/A	N/A	115	115	115	
CONISTON <> KIAMA	Medium	Yes	Yes	115	130	115	130	115	N/A	N/A	140	140%	140	
KIAMA <> BOMADERRY	Narrow	No	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	140	N/A	140	
Redfern <>Down and Up Illawarra Dive	Wide	Yes	Yes	30	30	30	30	30	30	30	30	30	30	
Meeks Road - XPT Depot	Narrow	No	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15	15	15	
Allans Creek - Unanderra North Junction	Narrow	No	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	60	60	60	
Sutherland to Cronulla														
SUTHERLAND <> CRONULLA	Wide	Yes	Yes	100	N/A	100	100	100	100	80	100	N/A	100	
Erskineville Jct to Bondi Jct														
ERSKINEVILLE JUNCTION <> BONDI JUNCTION	Wide	Yes	Yes	60	N/A	60	60	60@	60	60	N/A	N/A	15	10a
Sydenham to Regents Park														
SYDENHAM <> REGENTS PARK	Wide	Yes	Yes	80	N/A	80	80	80	80	80	80	80	80	
Central to Wolli Creek (Airport Line)														
CENTRAL <> WOLLI CREEK	Wide	Yes	Yes	80	N/A	80	80	80	80	80	80	80	80	12a
Wolli Creek to Glenfield														
WOLLI CREEK JCT <>TURRELLA	Wide	Yes	Yes	80	N/A	80	85	80	80	80	85	85	85	
TURRELLA<>REVESBY - Main Line	Wide	Yes	Yes	115	N/A	115	125	115	115	80	125	125	125	
TURRELLA<>REVESBY - Local Line	Wide	Yes	Yes	110	N/A	110	115	110	110	80	115	115	115	
REVESBY <> GLENFIELD	Wide	Yes	Yes	115	N/A	115	115	115	115	80	115	115	115	
Glenfield to Leppington														
GLENFIELD <> LEPPINGTON - Main Line	Wide	Yes	Yes	115	N/A	115	115	115	115	N/A	115	115	115	
GLENFIELD <> LEPPINGTON – Loop Line	Wide	Yes	Yes	60	N/A	60	60	60	60	N/A	60	60	60	
Metropolitan Freight Lines														
NORTH STRATH JCT <> FLEM MARKETS JCT	Wide	Yes	Yes	50	N/A	50	50	50	50	50	50	50	50	
FLEMINGTON GOODS JCT <> FLEM STH JCT	Wide	Yes	Yes	40	N/A	40	40	40	40	40	40	40	40	
FLEMINGTON STH JCT <> LIDCOMBE GDS JCT	Wide	Yes	Yes	40	N/A	40	40	40	40	40	40	40	40	
FLEMINGTON MIDDLE JCT <> FLEM WEST JCT	Wide	Yes	Yes	50	N/A	50	50	50	50	50	50	50	50	
FLEM EAST JCT/ FLEM MIDDLE JCT <> HOMEBUSH BAY LOOP Olympic Park	Ext Med	Yes	Yes	50	N/A	50	50	50	50	N/A	50	50	50	
FLEMINGTON STH JCT <> ARTC BOUNDARY	Wide	* Yes	Yes	70	N/A	70	70	70	70	70	70	70	70	
ARTC BOUNDARY <> SEFTON PK EAST JCT	Wide	* Yes	Yes	80	N/A	80	80	80	80	80	80	80	80	
SEFTON PARK EST JCT <>SEFTON PK STH JCT	Wide	* Yes	Yes	35	N/A	35	35	35	35	35	35	35	35	
CHULLORA NTH JCT <> CHULLORA WEST JCT	Refer to ARTC for operating conditions													
CHULLORA WEST JCT <> PAC. NAT. DEPOT	Refer to ARTC for operating conditions													
CHULLORA TRACKFAST JCT <> INDUST SDGS	Refer to ARTC for operating conditions													
CHULLORA SOUTH JCT <> ENFIELD STH MAIN	Refer to ARTC for operating conditions													
ENFIELD SOUTH <> CAMPSIE	Refer to ARTC for operating conditions													
CAMPSIE <> WARDELL ROAD WEST JCT	Refer to ARTC for operating conditions													
ARTC BOUNDARY <> MEEKS RD WEST JCT	Narrow	No	Yes	40	N/A	N/A	N/A	N/A	N/A	N/A	40	40	40	
MEEKS RD WEST JCT > MEEKS RD/ SYDENHAM UP LINE Up North Fork	Narrow	* Yes	Yes	25	N/A	N/A	N/A	N/A	N/A	N/A	25	25	25	
SYDENHAM/MEEKS RD DOWN LINE Dwn North Fork <> MEEKS RD WEST JCT	Narrow	No	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25	25	25	
MEEKS RD STH JN <> MEEKS RD NORTH JCT	Narrow	No	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25	25	25	
MEEKS ROAD WEST JCT <> TEMPE JCT	Narrow	* Yes	Yes	25	N/A	N/A	N/A	N/A	N/A	N/A	25	25	25	14a
MARRICKVILLE JCT <> COOKS RIVER	Refer to ARTC for operating conditions													
COOKS RIVER <> BOTANY (10.410km)	Refer to ARTC for operating conditions													

+ See *Sydney Metropolitan area - operation of wide gauge rolling stock* (page 102) re operation of Wide Gauge rolling stock in the Metropolitan area.

+ + Refer to General Instructions, Section General Instructions, Section 10 Locomotive and Rolling Stock Data for group categories.

% Hunter cars not permitted beyond Dunmore.

***** This section of track may be 'Unavailable for electric traction'. Refer to the 1500-volt sectioning diagrams for the current status.

@ Waratah (A) and Waratah 2 (B) sets not permitted on ESR line between Erskineville Jct and Bondi Jct (Electrical and Signalling restrictions).Refer to note 10a.

For all operational requirements outside the TfNSW Metropolitan Heavy Rail network refer to the CRN and ARTC Train Operating Conditions Manuals.

Local area working - special instructions

When a number appears in the *Notes* column of Table 5, or Table 6 (pp 100-101), the pages referring to the specific locality should be examined for any special instructions or conditions that may be in force for the relevant section of line.

Sydney Metropolitan area - operation of wide gauge rolling stock

Due to a reduction of platform clearances, all trains containing **WIDE WIDTH (Group 5)** rolling stock as designated in *General Instructions, Section 10 Locomotive and Rolling Stock Data* shall reduce speed to ***20 km/h through all platforms*** and not accelerate until the last car has left the platform.

Specific localities

1 - City Circle

1a - Non stopping trains at City Circle stations

Non stopping trains are to reduce to a speed not exceeding 10 km/h in the tunnel before the platform and then proceed through the platform at a speed not exceeding 15 km/hr. Station staff are to announce that passengers are to stand clear, as the next train will not stop at that station.

7 - Strathfield to Newcastle Interchange

7a - Operation of Medium and Sub-Medium Width rolling stock between Sydney and the Newcastle area.

(The following conditions apply to Up and Down directions)

Medium and Sub Medium width rolling stock may operate under normal conditions between Sydney and Newcastle Interchange (both directions) except as shown below:

1. The instructions contained in the Sydney Trains Network Local Appendices *NLA 312 Gosford* regarding the operation of Medium and Sub Medium Width rolling stock in Gosford interlocking will apply.
2. The cars may pass upgrading operations and associated ballast trains at speeds not exceeding 10km/h provided that the train is safely piloted past ballast trains and machines in the non-operable position and stationary, and all staff are standing well clear.
3. In the event the cars will have to be locomotive hauled, the locomotive can be directly coupled to the leading car (T, H, M, A, B, D sets use special transition / emergency couplers).

   Prior to coupling locomotive, the brake pipe pressure on the locomotive shall be adjusted as required by the vehicle and vehicle hauling procedure (generally 500kPa, however some vehicles such as T sets are nominally 425kPa, refer to hauling procedure) and automatic brake applied and released on the locomotive a number of times.
4. If the cars are being locomotive hauled, the crew shall be made aware of the above mentioned conditions.
5. The Train Controller shall inform the signaller at Gosford when additional trains consisting of medium width electric suburban rolling stock are required to operate or out-of-course running occurs in order to enable the signaller at Gosford to take the necessary precautions to prevent trains consisting of medium

width electric suburban rolling stock passing or being passed on an adjacent line between 81.027km and 82.174 km by a similar train.

7b - Transfer of Extended Medium Width rolling stock between Sydney and the Newcastle area destinations.

(The following conditions apply to Up and Down directions)

Approval for the restricted movement of limited *extended medium width* suburban rolling stock outside the Wide Electric area from Cowan to Broadmeadow is given subject to the following conditions:

1. Approval applies to rolling stock with a maximum width of *3077mm ONLY* as listed in Table 5, or Table 6 (pp 100-101).
2. Approval applies to the area Cowan to Broadmeadow and United Group Limited Workshops only.
3. Approval applies for the purpose of transferring double deck suburban cars for the purpose of refurbishment or major repair only.
4. Normal track speed is permitted on all track, platforms, and tunnels with the exception that a reduced speed of ***30 km/h*** is required through the following platforms in both the Down and Up directions:

   Gosford, Wyong, Fassifern, Cardiff, and Broadmeadow.
5. All restrictions applying to the movement of Medium Width rolling stock in the area of Gosford Yard (as outlined in the Sydney Trains Network Local Appendices *NLA 312 Gosford* shall apply to these movements.
6. The Extended Medium width Electric rolling stock as detailed in *TS TOC 1* may pass or be passed by other passenger trains, freight trains, locomotives or other rolling stock to a maximum width of 3077mm wide travelling in the same or opposite directions, except as nominated in clause 5.

   For the complete list of 3077mm wide Suburban electric rolling stock approved to operate between Cowan and Goninans Broadmeadow under the conditions outlined above, refer to TS TOC 1, General Instructions, Section 10 Locomotive and Rolling Stock Data ***Group 4 Extended Medium Width Cars.***

   NOTE: *The above approval* ***does not apply*** *to* ***Tulloch type trailers.***
7. If the movement consists of extended medium and medium width cars, the above instructions will apply.
8. The extended medium width double deck suburban cars may pass upgrading operations and associated ballast trains at speeds not exceeding 10km/h provided that the train is safely piloted past ballast trains and machines in the non-operable position and stationary, and all staff are standing well clear.
9. Authority is given for the nominated rolling stock to pass the notice board 'WIDE GAUGE ROLLING STOCK MUST NOT PASS THIS POINT' located at Signal C19DM or C21UM at Cowan (Kilometrage 48.969km).
10. A portable headlight shall be fitted to the leading car in accordance with *NTR 406 Using lights*.

10 - Erskineville to Bondi Junction

10a – Bondi Junction – Block working of trains less than 4 cars in length.

Whenever a train or vehicle has to traverse the diamond crossing at Bondi Junction through 908/912 or 911/907 points in the reverse position and if the train or vehicle is less than 4 cars in length, it shall be block worked in accordance with Sydney Trains Network Rule *NSY 512 Manual block working* between SY767 and SY783 signals or SY770 and ES6.48 signals respectively.

Trains or vehicles shorter than 4 cars in length may not reliably operate the track circuits.

@ Due to electrical and signalling restrictions, Waratah (A sets) and Waratah Series 2 (B sets) are not permitted on the Eastern Suburbs Rail Line between Erskineville Junction and Bondi Junction.

12 - Central to Wolli Creek (Airport Line)

12a – Restriction of locomotive hauled services and non electric powered vehicles.

Under normal working conditions, diesel passenger services and non – electric powered vehicles are not permitted to operate on the Airport line.

Notice boards inscribed: *Drivers of locomotive hauled services and non-electric powered vehicles proceeding to the Airport line must not pass this point until authorised by the signaller*.

Refer to Sydney Trains Network Local Appendix *NLA 108 Central - Sydenham (via Green Square)* for further information.

14 - Metropolitan freight lines

14a - Restrictions for Medium, Extended Medium and Wide gauge trains at Meeks Road junction.

At Meeks Road junction trains of Medium, Extended Medium or Wide rolling stock outline may occupy either the Up Goods between 747 points and 774 points (West junction) or Down Goods between 746 catch points and 773 points (West junction). Only trains of Narrow rolling stock outline are allowed on the adjacent track.

Signaller at Sydenham Signal Control Centre is to ensure the above instructions are carried out.

Passenger train loads and running times

Version December 2021 (5.14)

The sectional running times published are based on RailNet Running Time Profiles (simulations). Any planned and timetabled sectional running times used in ad hoc paths, Daily Working Timetable, and Standard Working Timetable have additional time added to the published running times (for example recovery time), which should be accounted for by the train controller / planner / programmer as appropriate.

Western locomotive hauled loads – Up and Down Loads

	SECTION	LOCO TYPE	SINGLE	DOUBLE	TRIPLE	QUAD	VEHICLE CLASS	SECT RUN TIMES	NOTES
1	SYDNEY - LITHGOW	L2	850	1426	- -	- -	- -	1	NR only
2	LITHGOW - SYDNEY	L2	850	1426	- -	- -	- -	2	NR only

Western locomotive hauled running times

SECTIONAL RUNNING TIMES (INDICATIVE)			
Down		Up	
	1		2
SYDNEY TERMINAL		CRN BOUNDARY (158.800km)	
REDFERN	04:12	LITHGOW	00:36
ASHFIELD	06:48	LITHGOW C.S. BOX	02:00
BURWOOD	01:42	ZIG ZAG	04:18
STRATHFIELD	01:00	EDGECOMBE	06:18
HOMEBUSH	01:00	NEWNES JUNCTION	03:06
FLEMINGTON	01:42	MT VICTORIA	09:30
LIDCOMBE	02:00	KATOOMBA	16:48
AUBURN	02:06	WENTWORTH FALLS	10:42
CLYDE	02:18	LAWSON	10:18
GRANVILLE	00:36	SPRINGWOOD	24:54
PARRAMATTA	02:00	VALLEY HEIGHTS	03:18
WESTMEAD	01:42	GLENBROOK	10:48
SEVEN HILLS	05:24	EMU PLAINS	11:24
BLACKTOWN	02:18	PENRITH	02:24
ST MARYS	09:36	ST MARYS	06:24
PENRITH	06:42	BLACKTOWN	09:54
EMU PLAINS	02:00	SEVEN HILLS	02:18
GLENBROOK	09:42	WESTMEAD	06:00
VALLEY HEIGHTS	10:48	PARRAMATTA	02:30
SPRINGWOOD	03:00	GRANVILLE	02:18
LAWSON	23:12	CLYDE	00:36
WENTWORTH FALLS	09:12	AUBURN	02:12
KATOOMBA	09:54	LIDCOMBE	02:12
MT VICTORIA	11:12	FLEMINGTON	02:18
NEWNES JUNCTION	13:24	HOMEBUSH	01:18
EDGECOMBE	03:00	STRATHFIELD	01:00
ZIG ZAG	05:42	BURWOOD	02:00
LITHGOW C.S. BOX	04:00	ASHFIELD	01:54
LITHGOW	01:42	REDFERN	06:18
CRN BOUNDARY (158.800km)	00:24	SYDNEY TERMINAL	03:18

Section 18

Coal train working

18. Coal train working

Version August 2021

General - Sectional running times and full sectional loads

The locomotive-load-run times configurations (DOWN loads and UP loads) published in this section are for existing approved paths in the Standard Working Timetable (SWTT). For configurations that are not listed, the train shall run at the discretion of the train controller, based on the following:

- The trailing load does not exceed the sum of individual locomotive full sectional loads, accounting for load reductions specified in (TS TOC.1 Section 2.11 and 2.12)
- There is capacity on the network (based on the live status and the SWTT/DWTT) for the train controller to allocate additional times for the train if longer journey or sectional running times, or both are foreseen.
- The operator operates to the assigned schedule or under the direction of the train controller to ensure the train's arrival at critical junctions or destinations does not cause train control conflicts to the network.

The sectional running times published in this section are based on RailNet Running Time Profiles (simulations).

Any planned and timetabled sectional running times used in ad hoc paths, Daily Working Timetable, and Standard Working Timetable have additional time added to the published running times (for example recovery time), which should be accounted for by the train controller / planner / programmer as appropriate.

North coal train loads and running times

DOWN	LOADED						EMPTY			UP	LOADED				EMPTY		
Sect Run Times (INDICATIVE)	**2**	**2A**	**4**	**6**	**8**	**8G**	**1**	**3**	**5**	**Sect Run Times (INDICATIVE)**	**2**	**4**	**6**	**8**	**1**	**3**	**5**
MFN Flemington to:										Islington Jct to:							
Flemington Gds Sth Jct	01:00	01:00	01:00				01:00			Woodville Jct	02:06	02:06	02:00	02:06	02:00	01:54	02:06
Flemington Gds Mid Jct	01:42	01:42	01:42				01:42			Broadmeadow	00:54	00:54	01:00	01:06	00:48	00:48	01:18
Flemington Markets	01:12	01:12	01:12				01:12			Broadmeadow Yd	01:36	01:36	02:00	02:06	01:18	01:24	01:24
Nth Strathfield Jct	03:42	03:42	03:42				03:42			Adamstown	00:36	00:36	00:54	00:54	00:24	00:30	00:30
Concord West	02:30	02:30	02:30				02:24			Sulphide Jct	08:18	08:30	13:30	13:48	06:18	06:24	06:12
Rhodes	01:36	01:48	01:54				01:36			(1) Teralba Coll Jct	02:24	02:54	02:30	03:00	02:24	02:24	02:24
West Ryde	02:18	02:18	02:36				02:18			(2) (3) Newstan Coll Jct	07:06	08:06	09:54	11:48	06:30		06:36
Eastwood	04:42	05:00	04:42				02:36			Fassifern	00:30	00:30	00:24	00:30	00:30		
Epping	03:48	04:06	03:42				02:18			Awaba	04:18	05:12	04:48	06:18	04:00		
Thornleigh	12:18	12:54	12:30				07:18			(4) Eraring Jct	05:30	06:00	10:12	11:24	04:06		
Hornsby	04:24	04:42	05:00				03:42			Morisset	09:00	10:30	12:06	14:42	07:42		
Berowra	11:06	11:54	12:18				09:36			(5) Vales Point Jct	03:24	04:00	03:48	04:36	03:06		
Cowan	04:24	04:36	04:36				04:24			Wyee	04:00	04:54			03:36		
Boronia x/over	03:48	03:54	03:48				03:54			Wyong	11:54	14:24			10:36		
Hawkesbury River	05:48	05:48	05:48				05:48			Gosford	16:30	19:24			16:06		
Woy Woy	15:42	16:30	16:54				13:42			Woy Woy	07:24	08:12			07:06		
Gosford	07:18	07:24	08:12				07:00			Hawkesbury River	14:24	15:42			13:30		
Wyong	16:48	17:42	19:54				15:54			Boronia x/over	14:30	14:30			08:00		
Wyee	11:24	11:42	13:48				10:30			Cowan	10:48	10:54			05:48		

DOWN	LOADED						EMPTY			UP	LOADED	EMPTY
(1) Vales Point Jct	04:06	04:30	04:54				03:30			Berowra	06:24	06:24	04:06
Morisset	03:18	03:42	03:54				03:06	03:06	03:06	Hornsby	10:12	11:00	10:00
(2) Eraring Jct	11:12	12:00	13:06				08:30	08:30	08:12	Thornleigh	04:00	04:30	03:54
Awaba	04:36	05:00	04:54				04:00	04:00	04:12	Epping	06:24	06:30	06:24
Fassifern	04:18	04:42	05:00				04:06	04:06	04:06	Eastwood	02:18	02:18	02:06
(3) (4) Newstan Coll Jct	00:18	00:18	00:24				00:18	00:18	00:18	West Ryde	02:12	02:12	02:12
(5) Teralba Coll Jct	07:00	08:06	08:06	08:54			06:36	06:36	06:30	Rhodes	02:42	02:42	02:42
Sulphide Junction	02:42	03:00	03:12	03:18	03:48	03:36	02:36	02:36	02:42	Concord West	02:12	02:06	02:06
Adamstown	09:24	10:00	09:36	09:54	14:06	12:54	07:24	07:24	07:24	Nth Strathfield Jct	02:06	02:06	02:06
Broadmeadow Yd	01:18	01:24	01:18	01:18	01:18	01:18	01:18	01:18	01:18	Flemington Markets	03:18	03:18	03:18
Broadmeadow	00:42	00:48	00:42	00:36	00:42	00:42	00:42	00:42	00:42	Flemington Gds Mid Jct	01:12	01:12	01:12
Woodville Jct	00:36	00:48	00:36	00:42	00:36	00:36	00:36	00:36	00:36	Flemington Gds Sth Jct	01:24	01:24	01:24
Islington Jct	01:12	01:18	01:12	01:12	01:18	01:18	01:12	01:12	01:12	MFN Flemington	01:36	01:36	01:36

Notes:
(1) 5 minutes from Vales Point.
(2) 5 minutes from Eraring.
(3) 6 minutes to/from Newstan Colliery (Empty Arriving).
(4) 10 minutes to/from Newstan Colliery (Loaded Departing).
(5) 10 minutes from Teralba Colliery.

Notes:
(1) 12 minutes to Teralba Colliery (To clear Down Main).
(2) 6 minutes to Newstan Colliery (Empty Arriving).
(3) 10 minutes to Newstan Colliery (Loaded Departing).
(4) 4 minutes to Eraring.
(5) 5 minutes to Vales Point.

Loaded - DOWN

	Section	Loco type	Single	Double	Triple	Quad	Vehicle Class	Sect Run Times
1	Sydney Metrop – Woodville Jct	L3/L4	--	--	--	4500	C	2
2	Sydney Metrop – Woodville Jct	L3/L4	--	--	--	4500	F	4
3	Sydney Metrop – Woodville Jct	AC6 (5)	--	--	4600	--	C	2
4	Sydney Metrop – Woodville Jct	AC6 (5)	--	--	4600	--	F	4
5	Sydney Metrop – Woodville Jct	AC6 (5)	--	--	5000(4)	--	C	2A
6	Newstan - Woodville Jct	L1	1650	3300	--	--	C/G	6
7	Newstan - Woodville Jct	L1+L3	--	2700	--	--	F	6
8	Newstan - Woodville Jct	L1+L3+L3	--	--	3700	--	F	6
9	Newstan - Woodville Jct	2 x L1 + 2 x L3	--	--	--	5520	G	6
10	Newstan - Woodville Jct	L3/L4	--	2100	--	4200	F/G	6
11	Newstan - Woodville Jct	AC6 (5)	--	--	5000(4)	--	C	2A
12	Teralba – Woodville Jct	L1	3150	5925 (1)	--	--	C	8
13	Teralba – Woodville Jct	L3/4	2100	4200	5925 (1)	--	F/G	8
14	Teralba – Woodville Jct	AC6 (5)	2623	5246	7369 (2)	--	C	8
15	Teralba – Woodville Jct	AC6 (5)	2623	5246	7369 (2)	--	G	8G
16	Teralba – Woodville Jct	L1			7369 (2)	--	G	8G
17	Teralba – Woodville Jct	L1+L1+L3/4			7369 (2)	--	G	8G
18	Teralba – Woodville Jct	L1		6521 (3)		--	G	8G
19	Teralba – Woodville Jct	L3/4			6521 (3)	--	G	8G

(1) To allow for greater flexibility, train of 72 vehicles can run into Teralba, however due to length restraints under the loader, only the first 55 vehicles are to be loaded. In this instance the total load will be 5925 tonnes.
(2) To allow for greater flexibility, train of up to 80 vehicles can run into Teralba, however due to length restraints under the loader, only the first 57 vehicles are to be loaded. In this instance the total load will be 7369 tonnes.
(3) To allow for greater flexibility, train of up to 60 vehicles can run into Teralba, however due to length restraints under the loader, only the first 53 vehicles are to be loaded. In this instance the total load will be 6521 tonnes.
(4) Applicable to PHTH/PHGH wagons (in ECP mode) only.
(5) Excludes SDA1 type AC locomotives (CSR, QBX).

Empty - DOWN

	Section	Loco type	Single	Double	Triple	Quad	Vehicle Class	Sect Run Times
1	Sydney Metrop - Woodville Jct	L3/L4	--	1300	--	--	C	1
2	Sydney Metrop - Woodville Jct	AC6	--	1300	--	--	C	1
3	Vales Point - Newstan	L6 + L12	--	900	--	--	C	3
4	Vales Point – Woodville Jct	L3/L4	--	1300	--	--	C	3
5	Vales Point – Woodville Jct	L1	--	1400	--	--	G	5
6	Vales Point – Woodville Jct	AC6	--	1300	--	--	C	3
7	Vales Point – Woodville Jct	AC6	--	1400	--	--	G	5
8	Eraring – Woodville Jct	L3/L4	--	1300	--	--	C	5

Loaded - UP

	Section	Loco type	Single	Double	Triple	Quad	Vehicle Class	Sect Run Times
1	Woodville Jct – Sydney Metrop	L3/L4	--	--	--	4500	C	2
2	Woodville Jct – Sydney Metrop	L3/L4	--	--	--	4500	F	4
3	Woodville Jct – Sydney Metrop	AC6 (1)	--	--	4600	--	C	2
4	Woodville Jct – Sydney Metrop	AC6 (1)	--	--	4600	--	F	4
5	Woodville Jct – Vales Pt	L3/L4	--	4200	--	--	C	6
6	Woodville Jct – Vales Pt	L3/L4	--	4200	--	--	F	8
7	Woodville Jct – Eraring/Vales Pt	AC6 (1)	2640	5280	7920	--	C	6
8	Woodville Jct – Eraring/Vales Pt	AC6 (1)	2640	5280	7920	--	F/G	8
9	Woodville Jct – Eraring	L1	3150	6300	--	--	C	6
10	Woodville Jct – Eraring/Vales Point	L1	3150	6300	--	--	F/G	8
11	Woodville Jct – Eraring	L1+L3	--	4800	--	--	C	6
12	Woodville Jct – Eraring	L1+L3	--	4800	--	--	F	8
13	Woodville Jct – Eraring	L3/L4	2100	4200	--	--	C	6
14	Woodville Jct – Eraring/Vales Point	L3/L4	2100	4200	--	--	F/G	8
15	Woodville Jct – Eraring	L1+L3+L3	--	--	6600	--	C	6
16	Woodville Jct – Eraring	L1+L3+L3	--	--	6600	--	F	8
17	Newstan – Vales Point	L6 + L12	--	2888	--	--	C	8

(1) Excludes SDA1 type AC locomotives (CSR, QBX).

Empty - UP

	Section	Loco type	Single	Double	Triple	Quad	Vehicle Class	Sect Run Times
1	Woodville Jct - Sydney Metrop	L3/L4	--	1300	--	--	C	1
2	Woodville Jct - Sydney Metrop	AC6	--	--	1500	--	C	1
3	Woodville Jct - Teralba	L3/L4	--	1800	--	--	C	3
4	Woodville Jct - Teralba	L1	--	1800	--	--	C	3
5	Woodville Jct - Teralba	AC6	--	1800	--	--	C	3
6	Woodville Jct - Newstan	L1	--	1300	--	--	C	5
7	Woodville Jct - Newstan	L3/L4	--	1300	--	--	C	5

Western coal train loads and running times

SECTIONAL RUNNING TIMES (INDICATIVE)					
DOWN	EMPTY	UP	LOADED		
COLUMN	1	COLUMN	%2	#4	#4A
MFN Flemington to:		CRN West Boundary to:			
Flemington Gds South	01:00	Lithgow	00:42	00:48	00:48
Lidcombe	02:48	Lithgow C.S Box	02:00	02:00	02:00
Auburn	02:06	Zig Zag	07:18	07:06	07:18
Clyde	02:18	Edgecombe	11:00	11:06	12:00
Granville	00:36	Newnes Junction	03:42	03:48	04:00
Parramatta	02:00	Mt Victoria	19:18	18:00	19:48
Westmead	01:42	Katoomba	23:06	19:54	21:48
Seven Hills	05:30	Wentworth Falls	11:54	10:42	11:36
Blacktown	02:18	Lawson	11:12	10:24	10:54
St Marys	09:54	Springwood	26:36	25:06	25:36
Penrith	07:00	Valley Heights	04:06	03:42	03:54
Emu Plains	02:06	Glenbrook	12:00	11:00	11:24
Glenbrook	08:18	Emu Plains	12:54	11:36	11:54
Valley Heights	09:24	Penrith	02:36	02:30	02:18
Springwood	02:36	St Marys	07:36	07:24	07:42
Lawson	17:42	Blacktown	10:54	10:48	11:30
Wentworth Falls	06:48	Seven Hills	02:24	02:18	02:30
Katoomba	08:00	Westmead	06:18	06:18	06:24
Mt Victoria	18:06	Parramatta	02:36	02:30	02:48
Newnes Junction	13:06	Granville	02:18	02:18	02:30
Edgecombe	03:00	Clyde	00:36	00:36	00:36
Zig Zag	05:48	Auburn	02:24	02:24	02:36
Lithgow C.S. Box	04:00	Lidcombe	02:12	02:12	02:30
Lithgow	01:42	Flemington Gds Sth Jct	01:42	01:42	01:48
CRN West Boundary	00:24	MFN Flemington	01:36	01:36	01:36

% / # Air brake (%) or Dynamic brake (#) for planning purposes only between Katoomba and Valley Heights.

Empty - DOWN

	Section	Loco type	Single	Double	Triple	Quad	Vehicle Class	Column
1	Sydney Metrop – Newnes Jct/Lithgow	L3/L4 (3)	- -	- -	- -	1125	C	1
2	Sydney Metrop – Newnes Jct/Lithgow	(1)	- -	- -	- -	1125	C	1
3	Sydney Metrop – Newnes Jct/Lithgow	L3/L4 (4)	- -	- -	784	- -	C	1
4	Sydney Metrop – Newnes Jct/Lithgow	L3/L4	- -	- -	- -	908	C	1
5	Sydney Metrop – Newnes Jct/Lithgow	(2)	- -	- -	- -	908	C	1
6	Sydney Metrop – Newnes Jct/Lithgow	AC6	- -	1300	- -	- -	C	1

(1) 2xL3/L4+2xDL or 3xL3/L4 + 1xDL.
(2) 1xL3/L4+3xDL.
(3) 1x L3/L4 locomotive may be placed off line.
(4) 2xL3/L4 + 1xDL.

Loaded - UP

	Section	Loco type	Single	Double	Triple	Quad	Vehicle Class	Column
1	Lithgow/Newnes Jct – Sydney Metrop	L3/L4	- -	- -	- -	4500	C/F	%2/#4
2	Lithgow/Newnes Jct – Sydney Metrop	(1)	- -	- -	- -	4500	C/F	%2/#4
3	Lithgow/Newnes Jct – Sydney Metrop	L3/L4 (3)	- -	- -	3344	- -	C/F	%2/#4
4	Lithgow/Newnes Jct – Sydney Metrop	L3/L4	- -	- -	- -	3876	C/F	%2/#4
5	Lithgow/Newnes Jct – Sydney Metrop	(2)	- -	- -	- -	3876	C/F	%2/#4
6	Lithgow/Newnes Jct – Sydney Metrop	AC6 (5)	- -	- -	4600	- -	C/F	%2/#4
7	Lithgow/Newnes Jct – Sydney Metrop	AC6 (5)	- -	- -	5000(4)	- -	C/F	#4A

(1) 2x L3/L4+2xDL or 3x L3/L4 + 1xDL.
(2) 1x L3/L4+3xDL.
(3) 2x L3/L4 + 1xDL.
(4) Applicable to PHTH/PHGH wagons (in ECP mode) only.
(5) Excludes SDA1 type AC locomotives (CSR, QBX).
% Air brake or # Dynamic brake for planning purposes only between Katoomba and Valley Heights.

Illawarra coal train loads and running times

SECTIONAL RUNNING TIMES (INDICATIVE)

DOWN	LOADED		EMPTY		UP	LOADED		EMPTY
Sect Run Times	**2**	**4**	**1**	**2**	**Sect Run Times**	**2**	**4**	**1**
Marrickville Jct	⇘				Inner Harbour			⇘
Meeks Road Junction	02:06				Coniston			03:18
Wolli Creek Junction	04:54				Wollongong			01:30
Hurstville	10:00				Corrimal			04:42
Mortdale	02:42				Thirroul			05:48
Sutherland	12:54				Scarborough			07:00
Waterfall	20:54				Coal Cliff			03:54
Helensburgh	08:30				Otford			07:30
(1) Metrop Coll Jct	02:36	⇘			(1) Metrop Coll Jct			05:06
Otford	04:18	04:24			Helensburgh			01:48
Coal Cliff	08:18	10:00			Waterfall			08:24
Scarborough	04:30	06:54			Sutherland			12:36
Thirroul	07:30	07:12			Mortdale			07:06
Corrimal	06:30	05:54			Hurstville			02:00
Wollongong	05:48	04:54			Wolli Creek Junction			07:36
Coniston	01:30	01:36			Meeks Road Junction			02:06
Inner Harbour	07:42	07:42			% Marrickville Jct			03:36
Inner Harbour			⇘		Wongawilli Junction		⇘	
Unanderra North Jct			7		Unanderra	⇘	10	
Unanderra			3	⇘	Unanderra North Jct	3		
Wongawilli Junction				10	Inner Harbour	8a		

Notes:
(1) 5 minutes to/from Metrop Colliery.

Notes:
(1) 5 minutes from/to Metrop Colliery.

SECTIONAL RUNNING TIMES (INDICATIVE)

DOWN	LOADED
Sect Run Times	**All**
Coniston	⇘
Unanderra North Jct	03:48
Unanderra	04:24
++89.200 km	- -
++91.080 km	06:18

++ On Unanderra – Moss Vale refer to Illawarra Division Pages for full sectional loads

Loaded - DOWN

	Section	Loco type	Single	Double	Triple	Quad	Vehicle Class	Sect Run Times
1	Sydney Metrop – Inner Harbour	L3/L4	- -	- -	- -	4500	C/F	2
2	Sydney Metrop – Inner Harbour	(1)	- -	- -	- -	4500	C/F	2
3	Sydney Metrop – Inner Harbour	L3/L4 (3)	- -	- -	3344	- -	C/F	2
4	Sydney Metrop – Inner Harbour	L3/L4	- -	- -	- -	3876	C/F	2
5	Sydney Metrop – Inner Harbour	(2)	- -	- -	- -	3876	C/F	2
6	Sydney Metrop – Inner Harbour	AC6 (4)	- -	- -	4600	- -	C/F	2
7	Metrop Colliery - Inner Harbour	L3/L4	- -	4500	- -	- -	C/F	4
8	Metrop Colliery - Inner Harbour	AC6 (4)	- -	5200	- -	- -	C/F	4

(1) 2xL3/L4+2xDL or 3xL3/L4 + 1xDL.
(2) 1 x L3/L4+3 x DL.
(3) 2 x L3/L4 + 1xDL.
(4) Excludes SDA1 type AC locomotives (CSR, QBX).

Empty - DOWN

	Section	Loco type	Single	Double	Triple	Quad	Vehicle Class	Sect Run Times
1	Inner Harbour- Unanderra	AC6	- -	1125	- -	- -	C/F	1
2	Inner Harbour- Unanderra	L3/L4	- -	1125	- -	- -	C/F	1
3	Unanderra – Wongawilli Junction	L4	1600	- -	- -	- -	C/F	2

Loaded – UP

	Section	Loco type	Single	Double	Triple	Quad	Vehicle Class	Sect Run Times
1	Unanderra – Inner Harbour	AC6	- -	4500 (1)(3)	- -	- -	C/F	2
2	Unanderra – Inner Harbour	AC6	- -	4600 (2)(3)	- -	- -	C/F	2
3	Unanderra – Inner Harbour	AC6	- -	- -	5000 (2)(4)	- -	C/F	2
4	Unanderra – Inner Harbour	L4	- -	4200 (1)(3)	- -	- -	C/F	2
5	Unanderra – Inner Harbour	L3	- -	4500 (1)(3)(5)	- -	- -	C/F	2
6	Wongawilli Junction – Unanderra	L4	1600	- -	- -	- -	C/F	4

(1) Two pipe trains
(2) ECP Trains
(3) Tahmoor to Inner Harbour route
(4) This is only approved for ECP trains operating from the western coal fields (diversion purposes)
(5) To allow some locomotive flexibility in the Tahmoor – Inner Harbour trains a single L3 category locomotive can be substituted by a single L4 category locomotive however in these instances only 42 wagons out of the 45 wagons consist can be loaded

Empty - UP

	Section	Loco type	Single	Double	Triple	Quad	Vehicle Class	Sect Run Times
1	Inner Harbour – Sydney Metrop	L3/L4	- -	- -	- -	1125 (3)	C	1
2	Inner Harbour – Sydney Metrop	(1)	- -	- -	- -	1125	C	1
3	Inner Harbour – Sydney Metrop	L3/L4 (4)	- -	- -	784	- -	C	1
4	Inner Harbour – Sydney Metrop	L3/L4	- -	- -	- -	908	C	1
5	Inner Harbour – Sydney Metrop	(2)	- -	- -	- -	908	C	1
6	Inner Harbour – Sydney Metrop	AC6	- -	- -	1300 (5)	- -	C	1
7	Inner Harbour – Metrop Colliery	L3/L4	- -	1125 (4)	- -	- -	C	1
8	Inner Harbour – Metrop Colliery	AC6	- -	1300	- -	- -	C	1

(1) 2xL3/L4+2xDL or 3xL3/L4 + 1xDL.
(2) 1 x L3/L4+3 x DL.
(3) 1 x L3/L4 locomotive may be placed off line.
(4) 2 x L3/L4 + 1xDL.
(5) 1 x AC6 off line.