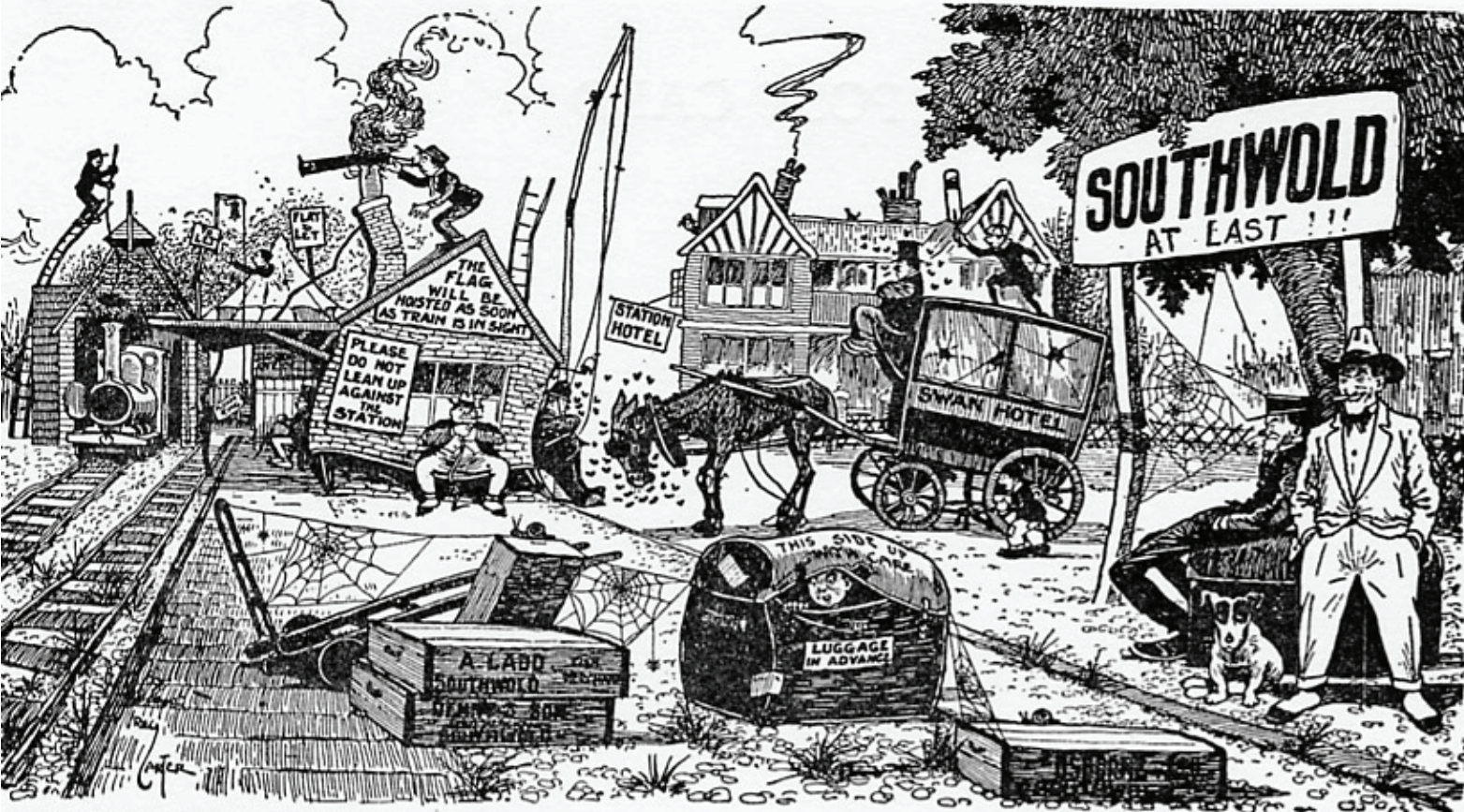




The Times

May 2013

A journal of transport timetable history and analysis



THE SOUTHWOLD RAILWAY - WAITING AT THE TERMINUS FOR THE DOWN EXPRESS WHICH IS SOMEWHAT LATE - A VERY UNUSUAL OCCURRENCE

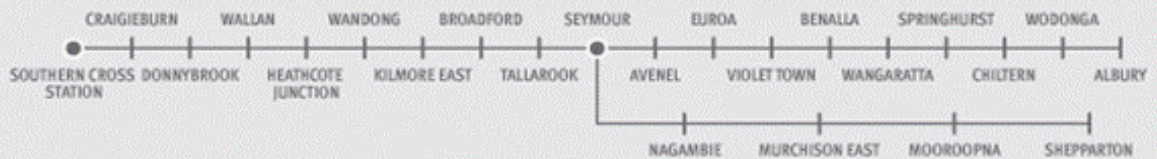
HALESWORTH and SOUTHWOLD.—Southwold.

Sec. and Man., H. Ward, 17, Victoria Street, S.W.

Miles	Down.							Miles	Up.																						
	Week Days.								Week Days.																						
	mn	rn	mn	aft	aft	aft	aft		rn	rn	mn	aft	aft	aft	aft																
278	London (L'pool St.) dep.	5	0	10	12	1	0	3	18	4	55	4	40	Southwold dep.	7	30	9	45	12	02	20	5	23	7	26	5	19				
	Halesworth dep.	8	40	10	45	1	15	3	45	6	35	8	12	8	0	1	Walberswick dep.	7	35	9	50	12	02	20	5	23	7	26	5	19	
	Wenhaston dep.	8	51	10	56	1	26	3	56	6	46	8	23	8	11	4	Blythburgh dep.	7	49	10	4	12	19	2	39	5	42	7	45	5	38
	Blythburgh dep.	9	2	11	7	1	37	4	7	6	57	8	34	8	22	6½	Wenhaston dep.	8	0	10	15	12	30	2	50	5	53	7	56	5	49
	Walberswick dep.	9	15	11	20	1	50	4	20	7	10	8	47	8	35	9	Halesworth 278 arr.	8	11	10	26	12	41	3	16	4	8	7	6	0	
	Southwold arr.	9	21	11	26	1	56	4	26	7	16	8	53	8	41	109½	278 London (L'pool St.) arr.	11	22	1	20	3	42	5	56	9	22	9	10	

|| Station for Wangford (2½ miles).

Measuring the world's worst timetable performance



Inside: “Central” versus “Sydney”
 NZR conditional trains in its PTT
 What’s in a name-4?
 How bad can a timetable get?

RRP \$4.95
 Incl. GST

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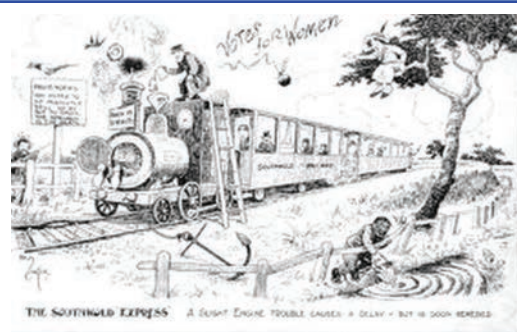
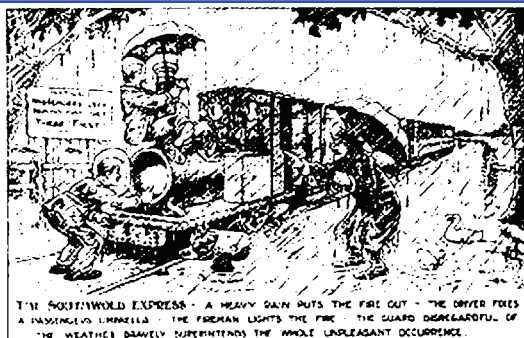
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On the front cover

Railways and railway timetables have always been fair game for humorists and cartoonist. The cartoons of Roland Emmet (mostly affectionate cartoons of the Far Tottering and Oyster Creek Railway) were best sellers in book form and are true collectors' items. The Southwold Railway became the butt of some rather less affectionate cartoons by Reginald Carter. Carter made a name for himself as a comic picture postcard artist, his first commission being at the age of 17. He had a studio built at the bottom of his garden and started publishing his best-known postcard series: *The Southwold Railway Cartoons*. During the First War, he produced many more cards gently lampooning army life. A selection of his postcards on the Southwold can be found at http://transportsofdelight.smugmug.com/RAILWAYS/BRITISH-STEAM-LOCOMOTIVES/NARROW-GAUGE/17391786_3vz9/1546653359_ZRDhcd6#!i=1546653359&k=ZRDhcd6 A Southwold Railway Timetable from the July 1922 Bradshaw shows a service of 6 slow trains per day over this little line. Was the service as bad as that currently provided on V/Lines Albury line today? This question is examined within the pages of this issue of The Times.



Contributors The Times

Robert Henderson (2), Victor Isaacs, Geoff Lambert, Reg Carter welcomes articles and letters. Send paper manuscripts or word-processor files on disk or via e-mail to the editor at the address below. Illustrations should be submitted as clean sharp photocopies on white paper or scanned GIF or TIF format images with at least 300 dpi resolution on disk or via e-mail.

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Letter- NSW lines served by passenger trains

from ROBERT HENDERSON

I am writing to comment on the list of passenger train lines by the Master of the Lists, Ross Willson, in the April issue of The Times.

The year 1943 is significant for both the Master and this correspondent, so it was very timely that such a list be published. However, I wonder if time is catching up with some of us. So firstly I point out that, while the title of the list clearly states "Lines ... within New South Wales", mention is made of lines to South Brisbane, Canberra and Wodonga!

Secondly, for some lines, very specific junction names are recorded in the list. My perception of the nomenclature used in the list is that reference was possibly made to the marvellous New South Wales Railways' Curve and Gradient Diagrams. My copy was purchased sometime in the early

1960s, but one gets the impression that the diagrams may have been drawn many years prior to that. So hopefully it can be taken as a reference document as at the date of our list. Looking at my well preserved 1960s-bought masterpiece, I could not help but note these specific junction names, not recorded in the list:

Clyde Junction (as junction of the Carlingford line)

Goulburn North Junction (Crookwell)

Wallerawang West Junction (Gwabegar)

Nyngan Junction (Cobar)

East Greta Junction (Cessnock)

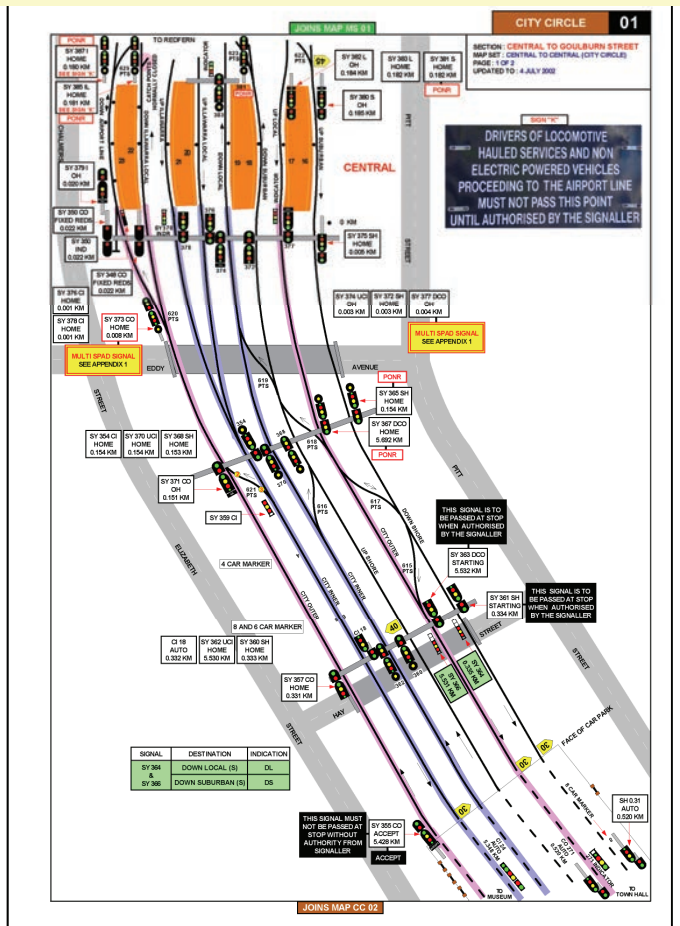
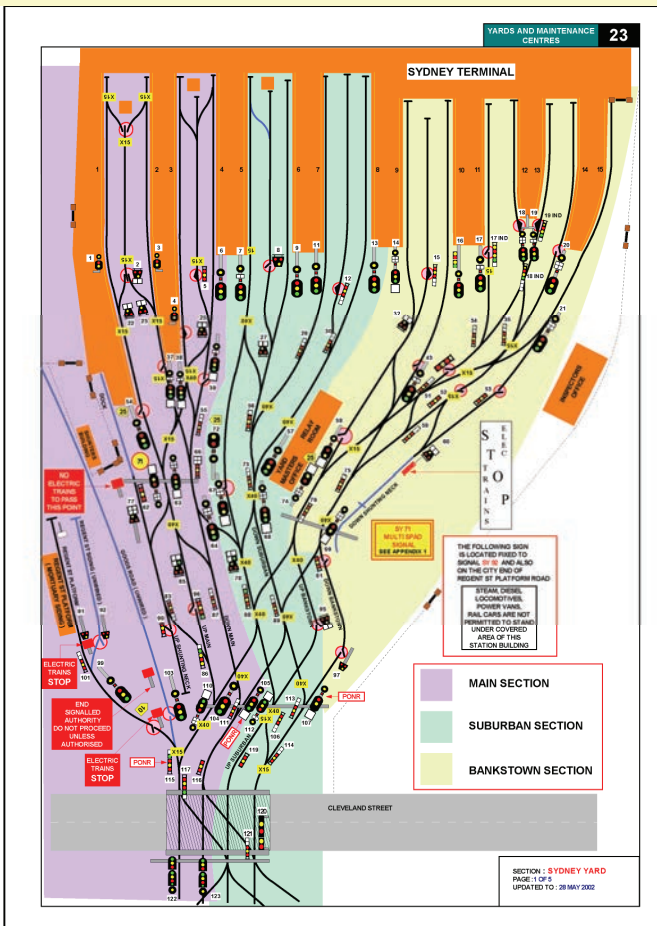
South Junction (but presumably Narrabri South Junction in full) (Walgett).

Thirdly, a matter for debate is whether Sydney is the same station as Central.

Radiating from this point (or these points?) in the list are "Central-St James" and "Central-North Sydney-Hornsby", but "Sydney-Bourke". So the question arises in my mind as to how, in terms of the list, a suburban electric train arriving at Central from St James continued its journey to (say) Cronulla? Did it follow the "Sydney-Bourke" line for the short distance to Illawarra Junction? Page 3 of our prime reference document shows that Sydney and Central are separate stations (with a height differential of four feet!), and that different curves and gradients apply to the subject section of line. [see below, Editor]

And, finally, a question seeking information. As 1943 was at about the height of World War II, did troop trains (which surely carried passengers) travel via the North Strathfield Loop?

The two Sydneys. A long time ago, I realised that even taxi drivers knew the difference between "Central" and "Sydney" - more correctly "Sydney Terminal". This is unusual in this day and age as most taxi drivers would not know their knee from their elbow. These names persist even in current maps and track diagrams, as shown by the extracts from the current Drivers' Route Knowledge maps. The 0 km post is shown for Central, but not for Sydney Terminal, although I believe it is meant to be at the Platform 1 buffer stops. - Geoff Lambert, Editor.



Conditional trains in a Public timetable: New Zealand Railways 1951

VICTOR ISAACS

New Zealand Railways issued their booklet of "Time-Tables North Island on and after June 3, 1951", new series, no. 2. This was the period when separate Public timetable booklets were issued for the North and South Islands. The Public timetables not only included trains, but also – at the back - NZR bus services, of which, in this era, there were many, both rural and suburban.

Our first illustration is of the line to Northland. I think that there are a few interesting aspects of this. First, is the fairly lavish provision of local trains. These are all marked with an "S" symbol standing for Second class only. In practice, these were very slow Mixed trains. Secondly, there is the meagre provision of long distance trains. There was a reasonable train from Auckland to Whangerei, the principal town of the region, just thrice a week! This is the train designated "Express" and running only on Mondays, Wednesdays and Fridays on both directions. Unfortunately, this is all too typical of NZR in this period – the time when motor cars were making a

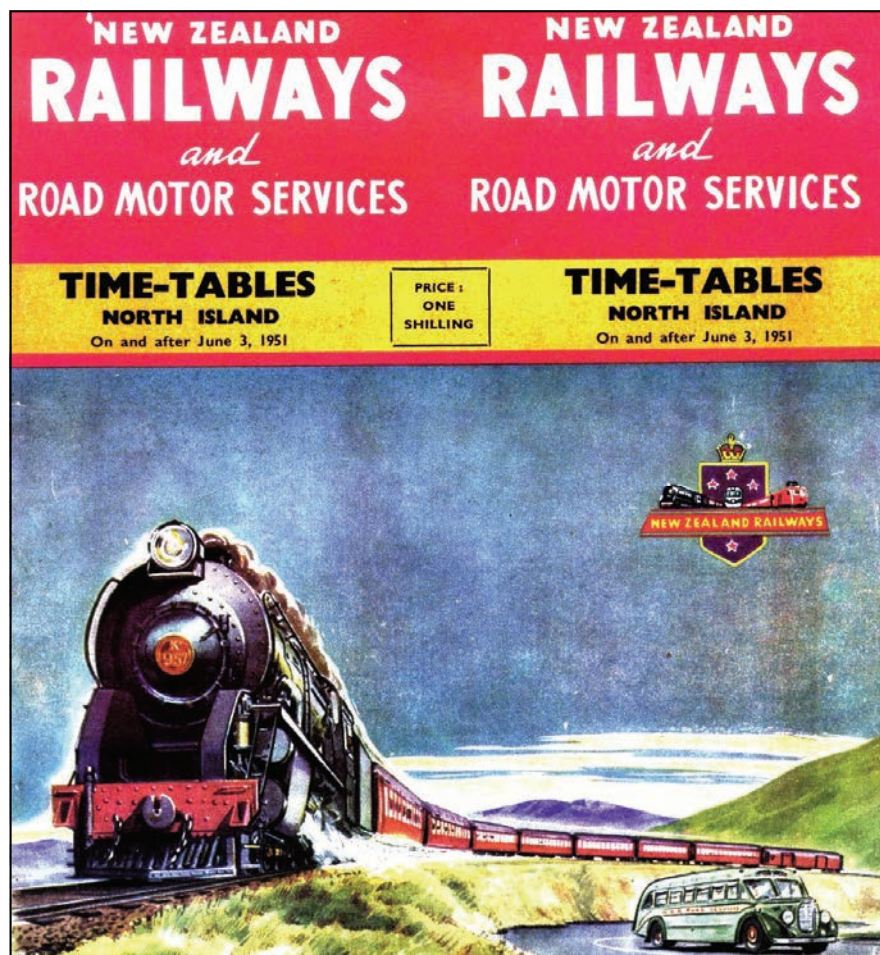
significant impact on society. NZR was still recovering from post-war coal and materials shortages. Thirdly – and most unusually – is the setting out in detail in a Public timetable, the timetable of a conditional train. This is designated "Relief Express". The footnote says this "Runs only when required". Presumably this would be at holiday times, but this is not stated.

The next two illustrations are of the most important railway line in New Zealand – the North Island Main Trunk (as New Zealanders call mainlines) from Auckland to Wellington. In these timetables we see that there are the schedules for no less than three conditional extra passenger trains. One was a relief to the overnight Express and one a relief to the overnight Limited Express. If both of these ran, there would be four overnight trains on the length of the Main Trunk. The third possible additional train could perhaps be called an occasional, rather than a conditional train. This was the Daylight Limited. This ran from Wellington to Auckland and v.v.

thrice weekly "during summer holiday season only" but the dates are not given.

What is also interesting is that provision is also made in this Public timetable for consequential alterations to other services. Some of the very local trains have side notes indicating they have different times in the event that one of the conditional extras runs. For example, a note states that no. 592, the 4.15 pm from Taumaranui to Frankton Junction "Leaves Taumaranui at 5.0 pm when J-10 special "Daylight Limited" express runs". We can see three such consequential alterations in this double page spread.

All of these consequential alterations were to local trains, of which in this period, there were many on the Main Trunk. What seems especially unusual to us today is the provision of extra Mixed trains from some of the towns very late on Saturday nights. These would have been to take the picture goes home. Perhaps, however, there were only a limited number of drunks, as 6 o'clock closing was definitely the rule in NZ then.



AUCKLAND—WHANGAREI—OPUA

Feet. Height above Sea Level.	Miles. Distance from Auckland.	Table	Days of Week											Sunday							
			1057	07	77			73	75	13	15	221	13	37	23-29	161	53	65	77	73	373
			Tue. to Sat.	Mon.	Tu. W. Th.	Fri.	Sat.	Mon. to Sat.	Tue. to Sat.	Mon. to Sat.	Mon., Wed., Fri.	Express.	Relief Express.	Mon. to Sat.	Sat.	Mon. to Fri.	Mon. to Fri.	Sat.	Mon. to Fri.	Sun. to Fri.	S
0		Auckland R dep	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.
174		Newmarket Jn. "																			
227		Mount Eden "																			
138		Avondale "																			
50	13	Henderson "																			
186	15	Waitakere "																			
139	21	Taupaki "																			
78	25	Huapai "																			
45	28	Waimauku "																			
32	31	Rewiti "																			
22	33	Woodhill "																			
43	34	Wharepapa "																			
14	36	Ohirangi "																			
24	37	Helensville Sth. "																			
11	38	Helensville R arr																			
9	40	Mount Rex dep																			
11	42	Puangaui "																			
17	43	Kaukapakapa "																			
74	45	Kanohi "																			
75	46	Makarau "																			
121	52	Tuaporoa "																			
159	56	Ahuroa "																			
144	59	Woodcocks "																			
79	62	Kaipara Flats "																			
56	64	Hotoe "																			
77	68	Wayby "																			
216	71	Wellsford "																			
37	75	Te Hana "																			
30	79	Topuni "																			
83	83	Kaiwaka "																			
17	86	Rangani "																			
148	89	Bickerstaffe "																			
131	90	Maungaturoto R arr																			
92	92	Huarau dep																			
132	94	Paparua "																			
142	98	Mareretu "																			
119	101	Taipuha "																			
170	105	Waikiekie "																			
109	108	Waiohira Jn. arr																			
142	114	Tauraroa dep																			
223	118	Mangapai "																			
15	121	Oakleigh "																			
64	123	Portland "																			
7	125	Kiororoa "																			
13	130	Whangarei R arr	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.												
146	132	Mair dep	4.10	7.40	7.40	8.28	9.30			4.3	4.33										
355	134	Kamo "	4.35	8.0	8.0	9.0	9.55			4.13	4.43										
327	135	Ruatangata "																			
442	138	Kauri "																			
334	141	Hikurangi "	2.15	5.30	5.30	6.30	7.15			2.55	3.25										
351	142	Waro "																			
322	144	Otonga "																			
306	146	Whakapara "																			
308	149	Waiotu "																			
317	150	Hukerenui "																			
353	153	Akerama "																			
373	155	Towai "																			
217	158	Maromaku "	3.15																		
194	160	Taikirau "																			
169	162	Motatau "																			
159	165	Opahi "																			
136	169	Pokapu "																			
96	172	Otiria & R arr	4.10	7.40	7.40	8.28	9.30			4.3	4.33										
61	174	Moerewa dep	4.35	8.0	8.0	9.0	9.55			4.13	4.43										
25	176	Kawakawa "		8.25	8.25	9.37	10.20			4.25	4.55										
16	178	Taumarere "																			
11	182	Whangae Bridge "																			
11	183	Opua arr	5.35	8.51	8.51	10.3	10.46			4.47	5.17										

For full suburban train service Auckland-Waitakere, see Table 3.
 For Road Services, Auckland-Whangarei, see Table 105.
 R Refreshment-room station.

For Road Services, Auckland-Dargaville, see Table 101.
 For Road Services, Whangarei to the Far North, see Table 109.
 S Second class only.



AUCKLAND—FRANKTON JUNCTION—TAUMARUNUI—WELLINGTON

(See also Tables 11 and 31)

Height above Sea Level.	Distance from Auckland.	Table 27		407	413	J-9	428	433	497	297	343	419	153	487	209	211	247
				Mon. to Sat.	Mon. to Sat.	See Foot-note A Daylight Limited.	Mon.	Tue. to Sat.	Mon. to Sat.	Mon. to Sat.	Express.	Express.	Mon. to Fri.	Sun.	Sat.	Sunday to Friday.	Express.
For full service between Auckland and Frankton Junction, see Table 11.																	
9		Auckland	R dep	a.m.	a.m.	a.m.	a.m.	D.M.	a.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.	p.m.
199	30	Pukekohe	"	"	"	8.19	"	"	6.59	2.0	3.36	"	"	"	"	"	"
21	43	Mercer	R arr	"	"	"	"	"	8.55	3.57	4.26	"	"	"	"	"	8.47
44	55	Huntly	" dep	"	"	"	"	"	9.24	4.17	4.47	"	"	"	"	"	"
123	85	Frankton Jn.	DR arr	"	"	10.20	"	"	11.2	5.6	5.24	"	"	"	"	"	9.44
For connections from Rotorua and East Coast stations, see Tables 12 and 20.																	
123	85	Frankton Jn.	DR dep	7.1	10.20	"	"	"	6.25	5.54	6.37	"	8.33	"	9.40	10.8	10.26
181	90	Rukuhia	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
171	94	Ohaupo	"	7.31	"	"	"	"	1.55	"	"	"	"	"	"	"	"
185	98	Ngaroto	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
165	100	Te Awamutu	R arr	7.51	"	"	"	"	2.15	"	"	"	"	"	"	"	"
117	103	Te Māwhai	" dep	7.57	"	"	"	"	2.21	6.26	7.6	"	9.5	"	10.12	10.40	10.58
157	106	Te Kawa	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
116	111	Kiokio	"	"	"	"	"	"	2.42	"	"	"	"	"	"	"	"
122	114	Otorohanga	"	8.41	"	"	"	"	3.5	6.52	7.37	"	9.31	"	11.6	11.26	"
131	120	Hangatiki	"	8.55	"	"	"	"	3.19	"	"	"	"	"	"	"	"
163	124	Te Kumi	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
178	126	Te Kuiti	R arr	9.11	11.37	"	"	"	3.38	7.16	8.1	"	9.45	"	10.57	11.23	11.46
676	134	Puketutu	" dep	5.40	9.50	11.40	11.59	12.45	3.52	7.21	8.6	7.35	9.53	10.30	11.6	"	"
870	139	Kopaki	"	6.42	"	"	1.35	2.0	4.28	"	"	"	"	"	"	"	"
936	143	Mangapehi	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
1113	146	Poroporo	"	"	11.26	"	2.6	2.31	5.13	"	"	9.15	11.51	"	"	"	"
762	152	Waimiha	"	"	11.43	"	3.25	3.25	5.34	"	"	9.45	12.11	"	"	"	"
632	160	Ongarue	"	7.54	12.8	"	3.55	3.50	5.50	"	"	"	12.55	"	"	"	"
597	165	Te Koura	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
585	167	Okahukura	arr	8.18	12.31	"	4.25	4.12	6.24	"	"	10.43	1.18	"	"	"	"
566	171	Taringamotu	" dep	8.26	12.32	"	4.26	4.18	6.34	"	"	10.44	1.27	"	"	"	"
561	174	Taumarunui	R arr	8.46	1.0	7.16	5.5	4.57	6.54	9.8	9.52	11.27	11.33	1.47	2.17	2.4	1.40
For connections to and from Stratford line, see Tables 29 and 30.																	
For complete service, Taumarunui - Palmerston North - Wellington, see Table 31.																	
561	174	Taumarunui	R dep	9.10	4.0	1.30	"	"	9.16	10.0	"	"	11.41	"	1.41	2.23	"
1933	199	Raurimu	"	10.54	5.52	"	"	"	"	11.14	"	"	"	"	"	"	"
2647	206	National Park	"	11.32	6.30	"	"	"	11.0	11.49	"	"	1.21	"	"	"	"
2029	224	Ohakune Jn.	R arr	12.23	7.28	3.20	"	"	11.42	12.31	"	"	1.58	"	"	"	"
2670	241	Waiouru	" dep	1.15	"	3.30	"	"	11.50	12.39	"	"	"	"	"	"	"
1450	265	Taihape	R arr	2.38	"	"	"	"	1.30	2.33	"	"	"	"	"	"	"
1072	278	Mangaweka	" dep	4.20	"	4.53	"	"	1.33	2.41	"	"	"	"	"	"	"
878	294	Hunterville	"	5.2	"	"	"	"	2.9	3.11	"	"	"	"	"	"	"
462	310	Marion	DR arr	5.57	"	6.15	"	"	2.42	3.44	"	"	"	"	"	"	"
462	310	Marion	DR dep	6.50	"	"	"	"	3.11	4.9	"	"	"	"	"	"	"
237	327	Feilding	"	7.26	"	6.37	"	"	3.21	4.17	"	"	"	"	"	"	"
100	339	Palmerston North	R arr	8.22	"	7.25	"	"	3.56	4.52	"	"	"	"	"	"	"
100	339	Palmerston North	R dep	9.1	"	"	"	"	4.19	5.15	"	"	"	"	"	"	"
For connections to Hawke's Bay stations, see Table 42.																	
For connections to Wairarapa stations, see Table 47.																	
100	339	Palmerston North	R dep	"	"	7.25	"	"	4.20	5.25	"	"	"	"	7.4	8.30	"
120	367	Levin	"	"	"	"	"	"	5.15	6.5	"	"	"	"	"	"	"
48	379	Otaki	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
23	399	Paekakariki	R arr	"	"	9.17	"	"	6.4	6.56	"	"	"	"	8.34	10.17	"
8	426	Wellington	DR arr	"	"	9.15	"	"	6.10	7.5	"	"	"	"	8.42	10.24	"
						10.5			7.0	7.54					9.30	11.12	
				p.m.	p.m.	p.m.	p.m.	p.m.	a.m.	a.m.					a.m.	a.m.	a.m.
				Mon. to Sat.	Mon. to Sat.	See Foot-note A	Mon.	Tue. to Sat.	Mon. to Sat.	Tue. to Sat.	Express	Mon. to Fri.	Sun.	Sat.	Sunday to Friday.	Express	Express

A Special DAYLIGHT LIMITED Express from Auckland to Wellington runs Monday, Wednesday, Friday during summer holiday season only.
D Dining-rooms.
R Counter refreshment-rooms.
S Second-class accommodation only.
§ Passengers joining trains at Superfine Lime Siding are charged the fare from the station in the rear, and passengers alighting at that siding are charged the fare to the station in advance.

⊕ Relief Express train. Runs only when required.
 * Stops, if required, to pick up or set down passengers.
 d Connects with express trains from Auckland and Rotorua (see Tables 11 and 12).
 s Stops on Sundays only.
 For Auckland-Hamilton-Taumarunui Road Services, see Table 147.
 For Taumarunui-Wellington Road Services, see Table 201.
 For Paekakariki-Wellington suburban train services, see Table 51.

WELLINGTON—TAUMARUNUI—FRANKTON JUNCTION—AUCKLAND

(See also Tables 32 and 12)

Height above Sea Level. Distance from Wellington.		Table 28														
		430 Tues., Sat. Express.	628 Sun. Express.	626 Mon. to Sat. Express.	638 ✦ Express.	688 Sun. to Fri. Limited Express.	402 Mon. to Sat. S	666 ✦ Express.	620 Mon. to Sat. S	412 Mon. to Sat. S	244 Mon. to Sat. S	J-10 See footnote B D'light Limited.	592 Mon. to Sat. S	440 Sat. S	426 Sat. S	
For complete service, Wellington - Palmerston North - Taumarunui, see Table 32.																
Feet.	Miles.	Wellington	DR dep	a.m.	p.m.	p.m.	p.m.	p.m.	a.m.	p.m.	a.m.	a.m.	a.m.	p.m.	p.m.	p.m.
23	27	Paekakariki	R arr		3.0	3.0	3.40	7.15		7.50						
			DR dep		3.49	3.50	4.30	8.4		8.39						
48	47	Otaki			3.57	3.57	4.38	8.10		8.47						
120	59	Levin					5.20									
100	87	Palmerston North	R arr		4.49	4.49	5.45			9.41						
					5.38	5.36	6.30	9.41		10.25						
For connections from Hawke's Bay stations, see Table 41.																
For connections from Wairarapa stations, see Table 48.																
100	87	Palmerston North	R dep		5.46	5.46	6.40	9.51		10.35						
237	99	Fedding			6.9	6.9	7.5	10.14		10.58						
462	116	Marton	DR arr		6.45	6.45	7.47	10.47		11.32						
For connections from Wanganui and New Plymouth, see Table 39.																
462	116	Marton	DR dep		7.8	7.8	8.15	10.55		11.38						
878	132	Hunterville			7.44	7.44	8.49									
1072	148	Mangaweka					9.22									
1450	161	Tahape	R arr		8.52	8.52	9.56	12.20		1.23						
			dep		9.0	9.0	10.4	12.28		1.32						
2670	185	Waiouru										6.55				
2029	202	Ohakune Jn.	R arr		10.41	10.41	11.45	1.56		3.28		8.35				
			dep		10.49	10.49	11.55	2.4		3.55		9.31				
2647	220	National Park			11.42	11.47	12.47			4.21		10.15				
1933	227	Raurimu										11.34				
561	252	Taumarunui	R arr		1.0	1.0	1.58	3.55		5.28		11.58				
												1.21				
For connections from and to Stratford line, see Tables 29 and 30.																
561	252	Taumarunui	R dep	12.40	1.10	1.10	2.6	4.3		5.36	7.10	8.25	2.0	4.20	4.15	10.35
566	255	Taringamotu									8.41	8.41				
565	259	Okahukura	arr								7.29	8.52		4.34		10.56
			dep								7.31	8.53		4.35		10.57
597	261	Te Koura														
632	266	Ongarue									7.53	9.15				
762	274	Waimiha									8.15	10.2				
1113	280	Porootarua									8.38	10.32				
936	283	Mangapehi														
870	287	Kopaki														
676	292	Puketutu														
178	300	Te Kuiti	R arr	2.31	2.59	2.59	3.53	5.35		6.10	9.35	11.13	4.24	5.50	6.58	1.35
			dep	2.33	3.4	3.4	3.58	5.37		7.13	9.42	11.17	4.53	5.52	7.30	
163	302	Te Kumi														
		Superfine Lime Sdg.														
131	306	Hangatiki														
122	312	Otorohanga		2.54	3.25	3.25	4.19	6.55		10.2	10.16	1.50	6.7	5.50	7.2	
116	315	Kokio														
157	320	Te Kawa														
117	323	Te Mawhai									7.20					
165	326	Te Awamutu	R arr								7.40					
			dep	3.19	3.50	3.50	4.44	6.20		8.9	7.56	11.2	4.43	7.3	9.2	12.5
185	328	Ngaroto														
171	332	Ohapu														
181	336	Rukahia														
123	341	Frankton Jn.	DR arr	3.49	4.20	4.20	5.15	6.50	8.55	8.27	11.48	4.15	8.2	6.58	10.7	1.0
For connections to Rotorua and East Coast towns, see Tables 11 and 19.																
For other trains between Frankton Junction and Auckland, see Table 12.																
123	341	Frankton Jn.	DR dep	4.0	4.30	4.30	5.25	7.10		8.47				7.8		
44	361	Huntly														
21	383	Mercer	R	5.5	5.37	5.37	6.33									
199	396	Pukekohe		5.33	6.1	6.1	6.57	8.36		10.23						
63	407	Papakura			b	s	s									
31	417	Otahuhu														
9	426	Auckland	R arr	6.30	7.0	7.0	7.51	9.30		11.15				9.20		
				a.m. Tues. Sat.	a.m. Mon.	a.m. Tues. Sun.	a.m. ✦	a.m. Mon. to Sat.	a.m. to Sat.	a.m. ✦				p.m. Mon. to Sat. See footnote B	p.m. Mon. to Sat.	a.m. Sun.

✦ Relief Express Train: Runs only when required.
 D Dining-rooms.
 R Counter refreshment-rooms.
 S Second-class accommodation only.
 B Special DAYLIGHT LIMITED Express from Wellington to Auckland runs Tuesday, Thursday, Saturday during summer holiday season only.
 § Passengers joining trains at Superfine Lime Siding are charged the fare from the station in the rear, and passengers alighting at that station are charged the fare to the station in advance.

* Stops, if required, to pick up or set down passengers.
 b Stops only to set down passengers.
 s Stops only on Sunday mornings, if required, to set down passengers.
 For Wellington-Paekakariki suburban train services, see Table 52.
 For Wellington-Taumarunui Road Services, see Table 202.
 For Taumarunui-Hamilton-Auckland Road Services, see Table 148.
 For information about Reservation of Seats and Sleeping Berths, see page 38.

What's in a name-4? Named Sydney private bus routes— *City Bus Direct*

ROBERT HENDERSON

Most bus routes are known solely by their number and end destinations. However, a small number of Sydney private bus routes have also had names attached to them, even if only for short periods of time. This is the fourth in a series, briefly surveying those that spring to mind.

CITY BUS DIRECT

The name “City Bus Direct” was a clever use of the initials “CBD” for new bus routes running from a number of suburban areas into the centre of Sydney. The three City Bus Direct routes were another venture of Harris Park Transport. They bore route numbers:

620, from the corner of Old Northern and New Line Roads (at the McDonalds store), Dural to the City via Cherrybrook, which started on 4 March 2002;

621, from North Parramatta to the City via North Rocks, Oakes and Aiken Roads, which started on 11 June 2002;

622, from Oatlands to the City via Pennant Hills and Jenkins Rods, Dunrossil Street and Ray Road, which started on 22 April 2002.

Each of the routes had a catchment area in the already existing contract area of the company, and then ran express along the M2 Hills Motorway and across the Harbour Bridge to the Queen Victoria Building, near Sydney Town Hall. They were the first and only routes which Harris Park Transport ran into the City. Their remaining routes were all entirely suburban. Routes such as those labelled City Bus Direct were made possible when the Passenger Transport Act was passed back in 1990. The Act enabled bus operators to take passengers from within their contract areas to points outside, but without conveying those passengers totally outside the contract area.

The first of the three City Bus Direct routes (620) started only three weeks after Glenorie Bus Company had commenced a similar service numbered 642, from Round Corner, Dural to the City, on 11 February 2002. At the time, Glenorie Bus Company was owned by the British National Express Group and they branded that part of their operation as “Hillsbus”. Later on – in December 2004 – the name Hillsbus was extended to the larger group of routes run by Westbus which lay generally within the

Hills district in the north-western suburbs of Sydney.

Curiously Harris Park Transport Route 620's Dural terminus was almost directly outside the New Line Road depot of its rival in the area, Glenorie Bus Company. City Bus Direct Route 620 and Hillsbus Route 642 ran in competition with each other along New Line Road and Pennant Hills Road, through Dural, Cherrybrook and West Pennant Hills. When this degree of competition came to light, some influence was brought to bear to get Glenorie Bus Company to alter its route so that, from 8 July 2002, its buses ran along streets other than New Line Road for a considerable distance.

Harris Park Transport was keen to present its new routes as being operated by the separate entity, City Bus Direct, as it set up a separate website in that name, complete with timetable and fare information. Both the website and paper timetables proclaimed that the service was being run with brand new, air conditioned Mercedes Benz buses. They erected J-poles at bus stops with the City Bus Direct logo, depicting a likeness of the Sydney Harbour Bridge. They also issued electronic credit-card-sized debit cards, known as “CBD easy cards” to speed up boarding and so that customers received discounts of 15% on the normal fare, as well as getting their Friday trip free if they had travelled regularly on Monday to Thursday. Marketing of the “City Bus Direct” image was enhanced by the display of those words on destination displays for City-bound trips.

Route 620 commenced with ten morning trips to the city, leaving Dural between 5.57 and 9.20 am, and ten afternoon return trips, with the first leaving the city at 1.45pm and the remainder between 4.15 and 7.10 pm. From 9 September 2002, the number of trips increased to 20 inwards throughout the day and 18 return. The timetable remained at about that level for the rest of the time that the service was run by Harris Park Transport and then up till 2009.

The other two routes ran less frequently. Route 621 had four trips each way and Route 622 eight each way. In both cases the trips on these routes ran only in the peak direction. During Harris Park's control, all three City Bus Direct routes ran solely on weekdays.

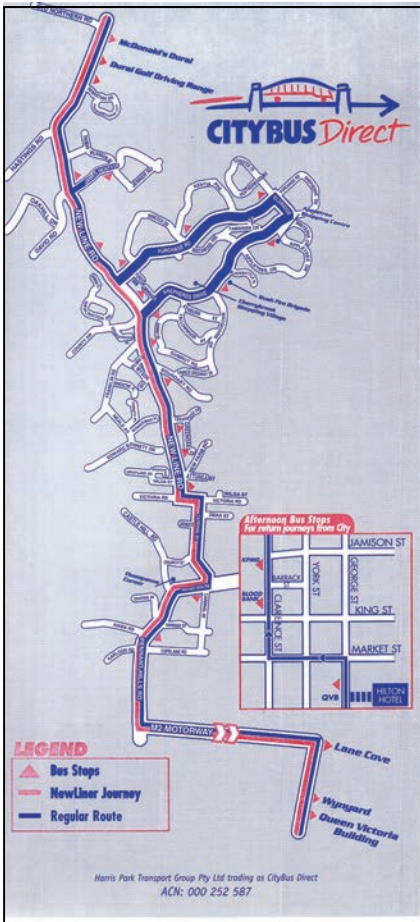
Routes 621 and 622 turned out to be relatively short-lived, as they both ceased on 8 October 2004, with the company saying that there had been insufficient patronage to make them commercially viable in the days when private bus operators relied entirely on fare revenue to maintain services.

After 621 and 622 ceased, 620 continued to run. But within weeks the whole Harris Park Transport network of bus services, including Route 620, was transferred to National Express Group's Hillsbus company on 22 December 2004, as Harris Park Transport management elected not to enter into a contract with the Government after amendments to the Passenger Transport Act. Their departure from running route service buses marked the end of the “City Bus Direct” name.

Following Hillsbus's acquisition of the ex-Harris Park routes, some drama occurred. While Hillsbus was able to run school holiday services on its new routes during January 2005, when the 2005 school year approached, Hillsbus apparently found itself with insufficient resources to provide all school day services. So, after only five weeks of operation by Hillsbus, the routes were further transferred to Sydney Buses, operating out of its Ryde depot. Sydney Buses continued to run all the ex-Harris Park routes for another eight months.

During those eight months, in August 2005, the management of both Hillsbus and Westbus changed from National Express Group to the consortium of Comfort DelGroCabcharge (CDC), which is owned partly by Singapore Bus Service and partly by the Australian-owned Cabcharge, a business associated with taxi operations. The new management was able to negotiate with the Government to retransfer many of the ex-Harris Park Transport routes, including Route 620, back to Hillsbus as from 25 September 2005.

Both Hillsbus and Sydney Buses maintained exactly the same timetable for Route 620 as Harris Park Transport's City Bus Direct from December 2004 until the Ministry of Transport's review of Region 4 took effect from 11 May 2009. In that review Route 620 was reduced to a peak hour service, becoming supplementary to the more regular, seven-day-a-week Route 621, which has as its suburban terminus the major commercial centre of Castle Hill, rather than McDonalds at Dural.



TIMETABLE

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PO Box 6405 Parramatta NSW 2150

After Hours Timetable Information: 131 500

ROUTE 620

DURAL AND CHERRYBROOK TO CITY

MONDAYS TO FRIDAYS

	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	PM	PM	PM	PM	PM	PM	PM			
McDonalds Dural	5.52	6.15	6.40	6.48	7.02		7.10	7.30					9.08	9.35	10.15	12.25	2.30	5.05	5.30	5.53	6.21	6.48	7.30
New Line Rd & Sebastian Dr	5.54	6.17	6.42	6.50	7.04		7.12	7.32					9.11	9.38	10.18	12.27	2.32	5.07	5.32	5.55	6.23	6.50	7.32
New Line Rd & James Henty Dr	5.56	6.19	6.44	6.52	7.06		7.14	7.34					9.13	9.40	10.20	12.29	2.34	5.09	5.34	5.57	6.25	6.52	7.34
James Henty Dr & Hickory Pl	5.57	6.20	6.45	6.53		7.05	7.16						9.14	9.41	10.21	12.30	2.35						
New Line Rd & Purchase Rd	6.00	6.23	6.48	6.56	7.10	7.09	7.20	7.38					9.17	9.44	10.24	12.33	2.38	5.12	5.37	6.00	6.28	6.55	7.37
Purchase Rd & Forest Glen	6.01	6.24	6.49	6.57		7.10	7.21		7.38	8.10	9.18	9.45	10.25	12.34	2.39								
Purchase Rd & Forrester Cr	6.05	6.28	6.53	7.01		7.15	7.26		7.42	8.14	9.22	9.49	10.29	12.38	2.43								
Appletree Shops	6.06	6.29	6.54	7.02		7.16	7.27		7.44	8.16	9.24	9.51	10.31	12.39	2.44								
Shepherds Dr & Salvia Walkway	6.10	6.33	6.59	7.07		7.21	7.32		7.50	8.22	9.29	9.56	10.36	12.43	2.48								
New Line Rd & Shepherds Dr					7.13		7.41											5.14	5.39	6.02	6.30	6.57	7.39
New Line Rd & Franklin Rd	6.11	6.34	7.00	7.08	7.14	7.24	7.35	7.42	7.51	8.23	9.30	9.57	10.37	12.44	2.49			5.15	5.40	6.03	6.31	6.58	7.40
New Line Rd & Victoria Rd	6.17	6.40	7.07	7.15	7.21	7.31	7.42	7.49	7.57	8.29	9.35	10.02	10.42	12.49	2.54			5.20	5.45	6.08	6.36	7.03	7.45
Pennant Hills Rd & Cardinal Av	6.19	6.42	7.09	7.17	7.24	7.34	7.45	7.53	8.01	8.33	9.39	10.06	10.46	12.51	2.56			5.23	5.47	6.10	6.38	7.05	7.47
Pennant Hills Rd & Aiken Rd	6.23	6.45	7.12	7.20	7.27	7.38	7.49	7.57	8.06	8.38	9.41	10.08	10.48	12.53	2.58			5.25	5.49	6.12	6.40	7.07	7.49
Lane Cove - Longueville Rd	6.43	7.05	7.33	7.41	7.50	8.01	8.14	8.22	8.31	9.01	9.59	10.26	11.06	1.11	3.16			5.44	6.07	6.30	6.58	7.25	8.07
Wynyard - York St	6.55	7.17	7.46	7.56	8.05	8.18	8.31	8.39	8.48	9.18	10.09	10.36	11.16	1.21	3.26							7.35	8.17
Queen Victoria Building	6.58	7.20	7.50	8.00	8.09	8.22	8.35	8.43	8.52	9.22	10.13	10.40	11.20	1.25	3.30			5.59	6.22	6.45	7.13	7.40	8.22

NewLiner journeys appear in red

Owing to traffic congestion and delays around Queen Victoria Building in the morning, certain services will terminate at Home Yardage, York St, adjacent to the Queen Victoria Building entrance in Market Street.

ROUTE 620

CITY TO DURAL AND CHERRYBROOK

MONDAYS TO FRIDAYS

	AM	AM	AM	AM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM		
Queen Victoria Building - George	7.50	8.25	10.40	11.20	1.30	3.35	4.00	4.40	5.05	5.15	5.30	5.40	5.50	6.08	6.25	6.45	7.15	7.45	8.25			
Wynyard - Clarence St - KPMG	7.57	8.32	10.47	11.27	1.37	3.42	4.07	4.48	5.15	5.25	5.40	5.48	5.58	6.17	6.32	6.52	7.22	7.52	8.32			
Lane Cove - Longueville Rd	8.22	8.47	10.58	11.38	1.48	3.53	4.20	5.03	5.31	5.41	5.56	6.04	6.14	6.33	6.43	7.03	7.33	8.03	8.43			
Pennant Hills Rd & Aiken Rd	8.42	9.04	11.15	11.55	2.05	4.10	4.37	5.21	5.48	5.58	6.13	6.21	6.31	6.50	6.59	7.19	7.49	8.19	8.59			
Pennant Hills Rd & Cardinal Av	8.44	9.06	11.17	11.57	2.07	4.12	4.39	5.23	5.50	6.00	6.15	6.23	6.33	6.52	7.01	7.21	7.51	8.21	9.01			
New Line Rd & Victoria Rd	8.46	9.08	11.19	11.59	2.09	4.14	4.41	5.25	5.52	6.02	6.17	6.25	6.35	6.54	7.03	7.23	7.53	8.23	9.03			
New Line Rd & Franklin Rd	8.49	9.11	11.22	12.02	2.12	4.17	4.44	5.29	5.56	6.06	6.21	6.29	6.39	6.58	7.06	7.26	7.56	8.26	9.06			
Shepherds Dr & Lemongrass Pl	8.50	9.12	11.23	12.03	2.13	4.18	4.45	5.30	5.57	6.07	6.22	6.30	6.40	6.59	7.07	7.27	7.57	8.27	9.07			
Appletree Shops	8.53	9.15	11.26	12.06	2.16	4.21	4.48	5.34	6.01	6.11	6.26	6.34	6.44	7.03	7.10	7.30	8.00	8.30	9.10			
Purchase Rd & Forrester Cr	8.54	9.16	11.27	12.07	2.17	4.22	4.49	5.36	6.03	6.13	6.28	6.36	6.46	7.05	7.11	7.31	8.01	8.31	9.11			
Purchase Rd & Forest Glen	8.57	9.19	11.30	12.10	2.20	4.25	4.53	5.39	6.06	6.16	6.31	6.39	6.49	7.08	7.13	7.33	8.03	8.33	9.13			
New Line Rd & Purchase Rd	8.57	9.19	11.30	12.10	2.20	4.25	4.53	5.40	6.07	6.17	6.32	6.40	6.50	7.09	7.14	7.34	8.04	8.34	9.14			
James Henty Dr & Hickory Pl	9.00	9.22		12.13	2.23	4.28	4.56	5.43	6.11	6.21	6.36	6.44	6.54	7.13	7.17	7.37	8.07	8.37	9.17			
New Line Rd & Sebastian Dr	9.04	9.26		12.17	2.27	4.32	5.00	5.46	6.15	6.25	6.40	6.48	6.58	7.17	7.21	7.41	8.11	8.41	9.21			
McDonalds Dural	9.07	9.29		12.20	2.30	4.35	5.03	5.49	6.19	6.29	6.44	6.52	7.02	7.21	7.24	7.44	8.14	8.44	9.24			

Also services weekends and public holidays

North Rocks to Sydney CBD

FARES	Area 1	Area 2	Area 3
Adult Single	\$6.50	\$6.00	\$5.50
Adult Return	\$12.50	\$11.20	\$10.50
Conc Single	\$3.30	\$3.00	\$2.90
Conc Return	\$6.50	\$5.50	\$5.50
5 Day Weekly	\$55.00	\$50.00	\$50.00

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- Reliability - arrive in the city refreshed and on time
- Customer Service - a local business with friendly drivers



Harris Park Transport Group Pty Ltd trading as CityBus Direct

NORTH PARRAMATTA, NORTH ROCKS AND OAKES RD TO THE CITY MONDAYS TO FRIDAYS

Nth Pmta - Church & Albert Streets	6.54	7.06	7.19	9.09
Nth Pmta - Church & Barney Streets	6.55	7.07	7.20	9.10
Hardware House Nth Rocks Rd	6.56	7.08	7.21	9.11
Whitbread Pl & North Rocks Rd	6.57	7.09	7.22	9.12
Nth Carriageway & North Rocks Rd	6.59	7.11	7.24	9.14
Loyalty & North Rocks Rds	7.01	7.13	7.26	9.16
Stratham Ave & North Rocks Rd	7.03	7.15	7.28	9.18
North Rocks Deaf & Blind School	7.05	7.17	7.30	9.20
Alkira & North Rocks Rds	7.07	7.19	7.32	9.22
Oakes & Murray Farm Rds	7.09	7.21	7.34	9.24
Oakes Rd M2 Underpass	7.10	7.22	7.35	9.25
Oakes Rd south of Aiken Rd	7.11	7.23	7.36	9.26
Pennant Hills & Aiken Rd	7.13	7.26	7.40	9.29
Lane Cove Longueville & Epping Rds	7.32	7.49	8.04	9.47
Wynyard, York Street	7.43	8.05	8.20	9.57
QVB, Market & York Streets	7.47	8.09	8.24	10.01

Owing to traffic congestion and delays around Queen Victoria Building in the morning, certain services will terminate at Home Yardage, York St, adjacent to the Queen Victoria Building entrance in Market Street.

CITY TO OAKES RD, NORTH ROCKS AND NORTH PARRAMATTA MONDAYS TO FRIDAYS

Queen Victoria Building (George St)	1.50	5.20	5.40	6.05
Wynyard - Clarence Street	1.57	5.30	5.50	6.15
Lane Cove Longueville & Epping Rds	2.08	5.46	6.06	6.31
Pennant Hills & Aiken Rds	2.25	6.03	6.23	6.48
Oakes Rd south of Aiken Rd	2.26	6.04	6.24	6.49
Oakes Rd M2 Underpass	2.27	6.05	6.25	6.50
Oakes & Murray Farm Rds	2.28	6.06	6.26	6.51
North Rocks Community Centre	2.30	6.08	6.28	6.53
Westfield North Rocks	2.32	6.10	6.30	6.55
Stratham Ave & North Rocks Rd	2.34	6.12	6.32	6.57
Loyalty & North Rocks Rds	2.36	6.14	6.34	6.59
Carriageway at North Rocks Rd	2.38	6.16	6.36	7.01
Whitbread Pl & North Rocks Rd	2.39	6.17	6.37	7.02
Hardware House Nth Rocks Rd	2.40	6.18	6.38	7.03
Nth Pmta - Church & Barney Streets	2.42	6.20	6.40	7.05
Nth Pmta - Church & Albert Streets	2.43	6.21	6.41	7.06

No services weekends or public holidays

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OATLANDS, CARLINGFORD & EPPING TO CITY

MONDAYS TO FRIDAYS

Strathalbyn Dr, Burnside Reserve	6.00	6.18	6.40	6.55	7.10	7.25	9.00	9.40
Burnside Shops, Blackwood Pl	6.01	6.19	6.41	6.56	7.11	7.26	9.01	9.41
Pennant Hills Rd & Masons Dv-Burnside	6.03	6.21	6.44	6.59	7.14	7.29	9.03	9.43
Pennant Hills Rd & Russell Rd-Kings	6.04	6.22	6.46	7.01	7.16	7.31	9.04	9.44
Pennant Hills Rd & Westminster Av	6.06	6.24	6.48	7.03	7.18	7.33	9.06	9.46
Pennant Hills Rd & Baker St	6.08	6.26	6.49	7.04	7.19	7.34	9.08	9.48
Jenkins Rd - Substation	6.10	6.28	6.52	7.07	7.22	7.37	9.10	9.50
Moseley St & Buckland Av	6.11	6.29	6.53	7.08	7.23	7.38	9.11	9.51
Moseley St - LDSaints Temple	6.12	6.30	6.55	7.10	7.25	7.40	9.12	9.52
Dunrossil Reserve, Dunrossil Av	6.15	6.33	6.59	7.14	7.29	7.44	9.15	9.55
Ray Rd & Midson Rd	6.18	6.36	7.02	7.17	7.32	7.47	9.18	9.58
Kandy Avenue	6.20	6.38	7.05	7.20	7.35	7.50	9.20	10.00
Lane Cove - Longueville Rd	6.35	6.53	7.25	7.40	7.55	8.10	9.35	10.15
Wynyard - York St	6.45	7.05	7.40	7.55	8.10	8.28	9.46	10.25
Queen Victoria Building	6.47	7.07	7.44	7.59	8.14	8.32	9.48	10.27

Owing to traffic congestion and delays around Queen Victoria Building in the morning, certain services will terminate at Home Yardage, York St, adjacent to the Queen Victoria Building entrance in Market Street.

CITY TO EPPING, CARLINGFORD & OATLANDS

MONDAYS TO FRIDAYS

Queen Victoria Building - George St	2.00	4.10	4.35	5.10	5.30	5.55	6.30	7.05
Wynyard - Clarence St	2.07	4.17	4.43	5.20	5.40	6.03	6.38	7.12
Lane Cove - Longueville Rd	2.18	4.30	4.58	5.36	5.56	6.19	6.54	7.23
Kandy Avenue	2.31	4.43	5.14	5.52	6.12	6.35	7.07	7.36
Ray Rd & Midson Rd	2.33	4.45	5.17	5.55	6.15	6.38	7.09	7.38
Dunrossil Reserve, Dunrossil Av	2.36	4.48	5.20	5.58	6.18	6.41	7.12	7.41
Moseley St - LDSaints Temple	2.38	4.50	5.23	6.01	6.21	6.44	7.14	7.43
Moseley St & Tanderra Ave	2.38	4.50	5.24	6.02	6.22	6.45	7.14	7.43
Jenkins and James Street	2.39	4.51	5.25	6.03	6.23	6.46	7.15	7.44
Pennant Hills Rd & Tintern Ave	2.41	4.53	5.27	6.05	6.25	6.48	7.17	7.46
Pennant Hills Rd- Gibbons St	2.42	4.54	5.28	6.06	6.26	6.49	7.18	7.47
The Kings School	2.44	4.56	5.30	6.08	6.28	6.51	7.20	7.49
Pennant Hills Rd & Gollan Av	2.45	4.57	5.31	6.09	6.29	6.52	7.21	7.50
Burnside Reserve - Strathalbyn Dr	2.49	5.01	5.35	6.13	6.33	6.56	7.25	7.54
Burnside Shops - Blackwood Pl	2.50	5.02	5.36	6.14	6.34	6.57	7.26	7.55

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What the Prussian Army horse can teach us about V/Line train timetables

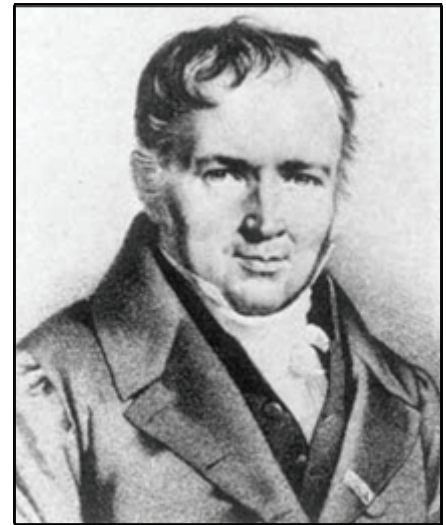
Geoff Lambert

Ladislaus Josephovich Bortkiewicz (1868–1931, near right) was an economist and statistician of Polish descent, who lived most of his professional life in Germany. In 1898, while he was working as a statistician for the Russian Railways, he published a book titled *The Law of Small Numbers*. In this book he first noted that events with low frequency in a large population follow a Poisson distribution even when the probabilities of the events varied. It was that book that made the Prussian horse-kick data famous. His data gave the number of soldiers killed by horse-kick each year in each of 14 cavalry corps over a 20-year period. There were 201 “Corps years” in his database.

He found that deaths by horse kick followed the pattern shown in the Table at upper right. A chart of these data appears below.



N	# of years	Total (%)	# with N deaths
0	109	54%	0
1	65	87%	65
2	23	98%	46
3	3	100%	9
4	1	100%	4
Sums	201		124



The total deaths from horse kicks were 124, and the average number of deaths per year per corps was thus $124/201 = 0.62$. This is a rate of less than 1. In any given year, we expect to observe—well, not exactly 0.62 deaths in one corps (that is not possible because deaths occur in modules of 1)—but sometimes (in this case 54% of the time) none, sometimes one, occasionally two, perhaps once in a while three, and (we might intuitively expect) very rarely any more. In this study there never was a year in which 5 or more deaths occurred. The black line shows how the percentage of deaths climbs as one increases N, the number of deaths per year. Bortkiewicz showed that those numbers follow a **Poisson distribution**. The Poisson Distribution is named for its discoverer (above, far right), who first applied it to the deliberations of juries; in that form it did not attract wide attention. More suggestive was Poisson's application to the science of artillery.

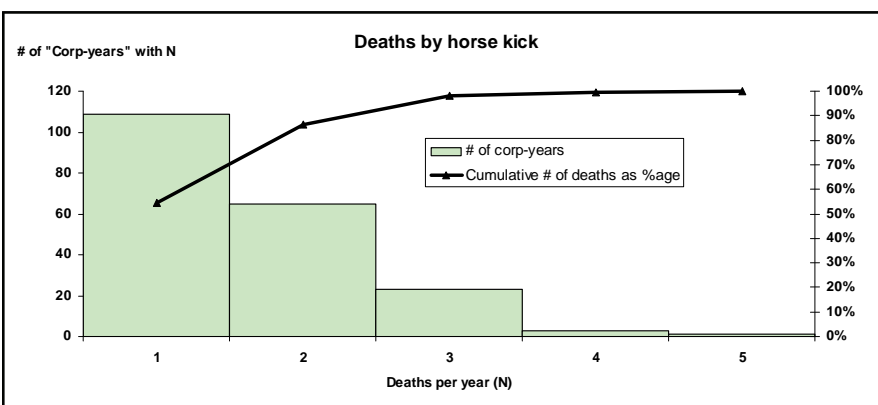
Wikipedia says: the Poisson distribution is

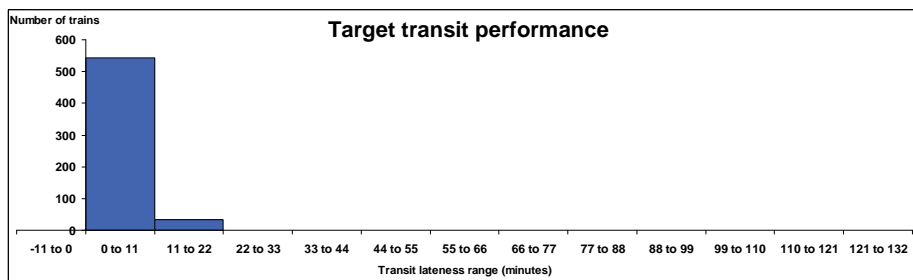
a discrete probability distribution that expresses the probability of a given number of events occurring in a fixed interval of time and/or space if these events occur with a known average rate and independently of the time since the last event. The Poisson distribution can also be used for the number of events in other specified intervals such as distance, area or volume. For instance, suppose someone typically gets 4 pieces of mail per day on average. There will be, however, a certain spread: sometimes a little more, sometimes a little less, once in a while nothing at all. Given only the average rate, for a certain period of observation (pieces of mail per day, phone calls per hour, etc.), and assuming that the process, or mix of processes, that produces the event flow is essentially random, the Poisson distribution specifies how likely it is that the count will be 3, or 5, or 11, or any other number, during one period of observation. That is, it predicts the degree of spread around a known average rate of occurrence.

A discrete stochastic variable X is said to have a Poisson distribution with parameter $\lambda > 0$, if for $k = 0, 1, 2, \dots$ the probability mass function of X is given by:

$$f(k; \lambda) = \Pr(X = k) = \frac{\lambda^k e^{-\lambda}}{k!},$$

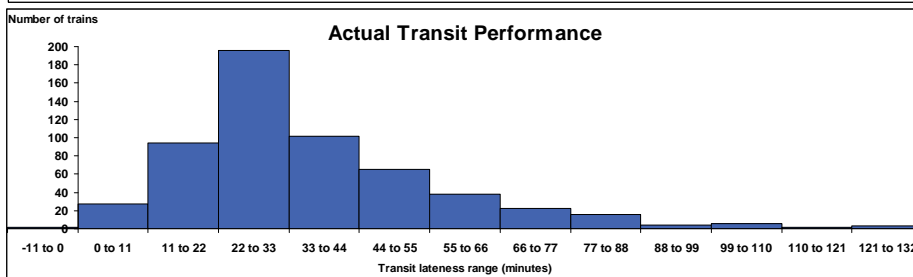
where e is the base of the natural logarithm



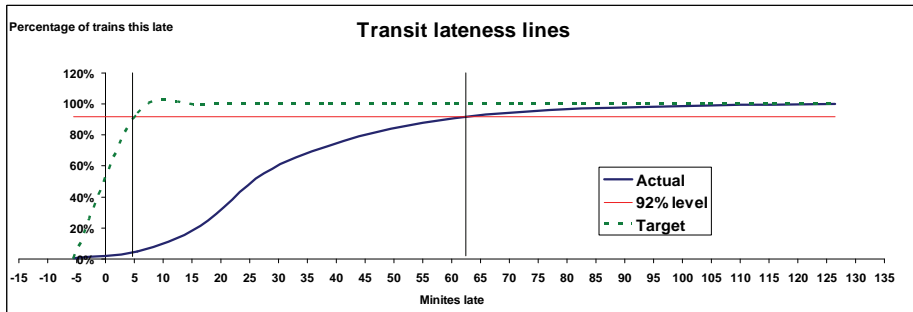


0 to 11 mins late	543 trains
11 to 22 minutes late	33 trains
22 to 33 minutes late	1 train

lates to what happens out on the track. We are particularly concerned here with this statistic because V/Line constantly blames events that happen in transit over ARTC's track for most of its woes.



We should note before proceeding further that 96% of timetabled trains are supposed to actually run. On the NESG, V/Line schedules 6 trains per day or about 183 per month. Ninety-six percent of this is 175 so, in theory, we would regard anything less than this as "poor performance." The reality on the NESG is not just a poor performance, but a *woeful* one. In March 2013, for instance, only 23% of trains actually ran against a target of 96%. While this low figure is terrible in itself, it also causes trouble for the statistician who has many fewer trains to analyse for lateness. There is some hint that V/Line prefers to cancel trains rather than reporting them as running late.



So, for V/Line, what does the Poisson distribution predict for how the trains *ought* to run? We ask the following questions: "How many trains run no later than 1 lateness unit or 11 minutes?; how many run 11 to 22 minutes late?; how many run 22 to 33 minutes late? – and so on. We can use Poisson's equation (above) to answer this question and apply it to the number of trains in my database. The database covers the 8.5 months from August 2012 to mid-April 2013. There are 577 trains for which I have records of running times.

($e = 2.71828...$) and; $k!$ is the factorial of k and; $\lambda = \lambda T$ when the number of events occurring will be observed in the time interval $T=1$. The positive real number λ is equal to the expected value of X and also to its variance. Clear? Good!

long-distance trains, its web-site says:

Our target is for at least 96% of scheduled services to run

Our on time target is 92%

On short distance, commuter services punctuality is measured on time to 5 minutes 59 seconds.

On long distance services it is measured on time to 10 minutes 59 seconds.

The horse-kick data, then, is the classic Poisson situation: a rare event, whose average rate is small, with observations made over many small intervals of time. For a Poisson distribution the variability (more particularly the "variance") is equal to the average- in this case 0.62. The square root of the variance is the statistic known as the standard deviation and in this case it is equal to 0.78. From statistical theory, we can say that an observation that is more than two standard deviations away from the average will occur only 5% of the time. Such an observation would be classed as unusual or, in the lingo, "statistically significant". Ninety-five percent of the time the observation will be closer to the average than this and we dare not say they are anything out of the ordinary. For Prussia's horses this 95% level is $0.61 + 2 \times 0.78 = 2.19$ deaths per year. Indeed we see in this case that more than 2 deaths per year occurred only 2% of the time.

V/Line has used a performance target of 92% rather than the 95% commonly used in statistics, but that doesn't matter mathematically. For its "units of time", V/Line has chosen 11 minutes, rather than the "corps-years" we chose for the horse-kick deaths. Although this is a somewhat unusual number to pick (it is even more peculiar because it is 10 minutes and 59 seconds); again this does not affect the mathematics. Let's call it a "lateness unit" in the same manner as we referred to a "Corps-year", above.

It is unclear what the V/Line jargon "on time" really means. One assumes it means "on time arrival at the final destination". Of course, trains may be late departing from their origin. The arrival lateness is thus the departure lateness added to the time lost on the journey. It has been shown in the transport and operations research literature that departure times are not Poisson-distributed, but that arrival times and transit times are. Both departure lateness and time lost in transit are of interest to the analyst- the latter more so because it re-

If V/Line were to meet its stated target, the statistics ought to pan out as shown in the Table above. And the chart ought to look like the chart at top left. The third chart is a line version of the same chart with the target performance shown by the dotted line and the 92% level by the red horizontal line. On the horizontal axis below where the red and dotted lines intersect is the time at which 92% of trains should fall. The average "expected" lateness (akin to the average number of horse-kick deaths per year) is 5 minutes.

What is the reality? It is horrible. The second chart shows *how* horrible. In V/Line's real world, the average (median) lateness is 40 minutes, against a target of 5 minutes. We have to stretch out our lateness criterion to about 63 minutes before we can cover the transit times of 92% of those 577 trains. The chart at top right on page 14 shows what percentage of trains ran "late" - i.e. 11 minutes or more late—over the 9 months to April 2013

The most common (modal, or the peak of Chart 2) delay is somewhere in the 22 to 33 minutes time slot- say about 27 min-

utes. This number appears to have been latched onto by V/Line. In December 2012, V/Line published an extraordinary “delay timetable” (pp 15-16). In this timetable it cautioned customers that trains would “possibly” be delayed by about 25 minutes over the course of the NESG journey. The publication of such a timetable is surely a world first and a frank admission of defeat. V/Line feels safe in doing so though because it sheets home the blame to ARTC. V/Line distributed those 25 minutes evenly over the journey, and equally for all trains. There is some evidence that delays accumulate at particular choke points like the Passing Lanes and on lengths of speed-restricted track. There is also evidence that some trains are better performers than others— often because they have planned standing time “delays” at Passing Lanes. This allows them to “crib” time and cancel out accumulated days when no crossing is needed.

ARTC has a somewhat different set of criteria for its tracks in general and for the NESG in particular, which it regards as part of the *Sydney-Melbourne Corridor*. There are very few freight trains that are truly “Sydney-Melbourne only”, so ARTC’s statistics are concerned primarily with passenger trains- which is what we are also interested in. Indeed passenger trains still form half of all the traffic over the NESG even when all other freights are included. ARTC does not analyse Riv-erina-Melbourne Freight services.

ARTC has set 15 minutes as its tolerance for “lateness”. Performance against timetable fell from 85% a few years ago to 35% in the third quarter of 2012 (chart middle right, NESG arrowed). This is almost entirely due to the phased introduction of the new V/Line NESG services, as can be seen in the third (derived) chart. These performance figures are better than those for V/Line, because the well-performing Countrylink trains form 40% of the passenger services on the NESG.

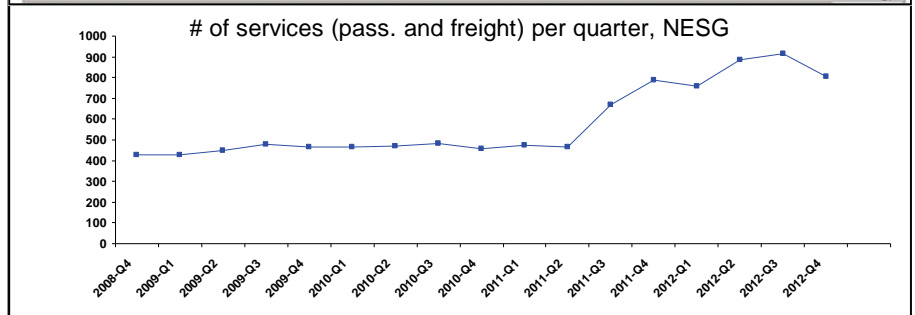
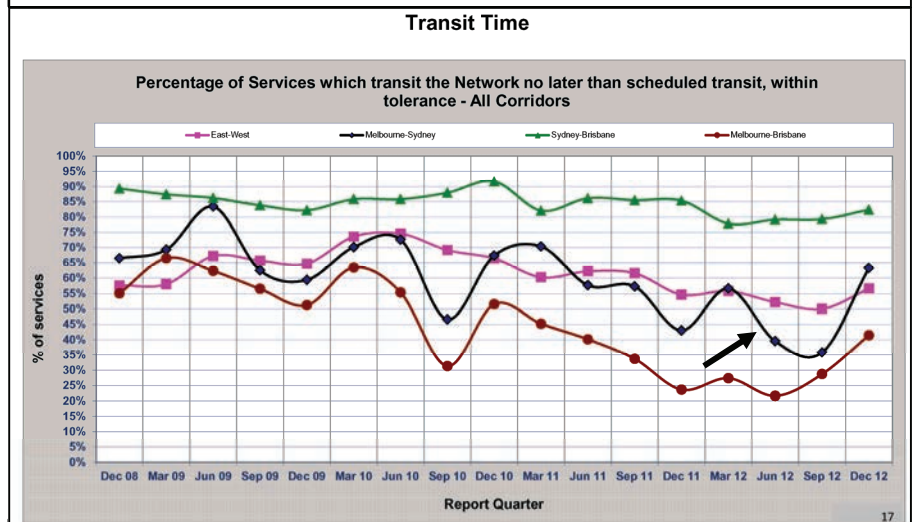
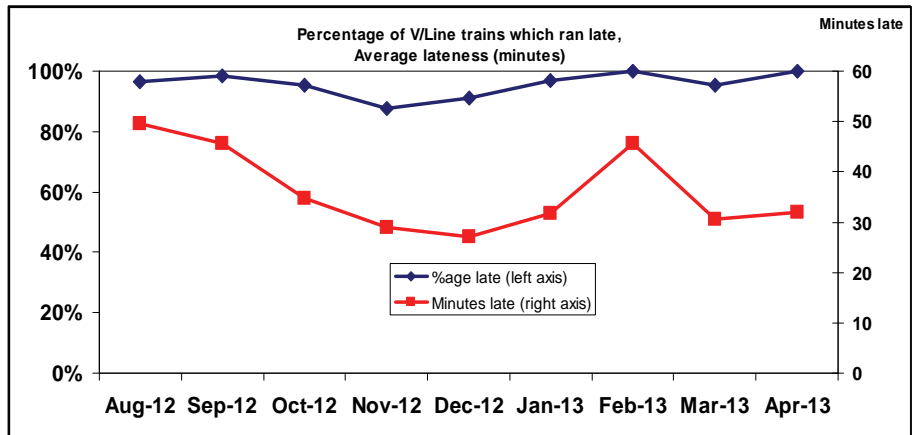
The 3rd quarter of 2012 shows an improvement in performance. This is due mostly to the high rate of cancellation of V/Line trains. There are simply fewer trains on the line and thus fewer to run late. This too can be seen in the third chart. The first quarter of 2013 will surely continue this trend.

How could V/Line fix these problems?

There are two ways of answering this question (in the interim before track and rolling-stock repairs are made)— slow the trains or move the goal-posts.

1. Slow the trains

If we were to ignore the Poisson distribution of the delay times, we would be tempted to slow the trains by the 25 minutes which V/Line has conjured up in its delay timetable. A little reflection, however, would show that this would increase



the punctuality only from the long term average of 4% to about 70%- this is no good for V/Line because it would continue to incur fines for late-running. To get to 92% punctuality, we need to slow the timetable by 63-11 = 52 minutes, so that 92% of trains would be no more than 11 minutes late. This course of action has been talked about in discussions between ARTC and V/Line, but it has never happened. As was pointed out in an earlier article in this series, this would have slowed down the trains to 19th Century performance.

2. Move the goal posts

We could change the criterion for “lateness” to 63 minutes. This would be ridiculous, so it won’t happen.

Taking in to account both the reliability and punctuality figures over the best part of a year, one can fairly say that these trains are the worst performers in nearly

160 years of Australian railway history, probably in world history.

The Southwold Railway

My paradigm for this critique of V/Line’s NESG service is the Southwold Railway. The Southwold Railway was a narrow gauge railway line between Halesworth and Southwold in the English county of Suffolk. 8¾ miles (14.1 km) long, it was 3 ft (914 mm) gauge. It opened in 1879 and closed in 1929. It became the subject of ridicule because of its unreliability, lack of punctuality and general unfriendliness. It gained this notoriety mostly from a young commercial artist, Reg Carter, who worked from a studio on the line. What would he have done with V/Line? An evocative video of the last train can be found at <http://www.youtube.com/watch?v=ygtjCLh4YBs>.

Melbourne – Albury/Wodonga (speed restrictions in place)

Melbourne to Albury/Wodonga via Seymour, Benalla and Wangaratta

Track manager ARTC is currently doing maintenance works on the Albury line that will allow the easing of speed restrictions.

As a result of the track condition, V/Line has listed the possible delays to trains to give you a more realistic indication of your journey time.

Delays listed are an indication only and subject to change, so **please still be ready for departure at your station at the scheduled time.**

		MONDAY – SUNDAY					
		SCHEDULED TIME	POSSIBLE DELAY	SCHEDULED TIME	POSSIBLE DELAY	SCHEDULED TIME	POSSIBLE DELAY
Service No.		8605		8615		8625	
Train/Coach		TRAIN		TRAIN		TRAIN	
Seating/Catering		★☕		★☕		★☕	
MELBOURNE		IC		IC		IC	
(Southern Cross)	dep	07:10	–	12:00	–	18:01	–
Broadmeadows		07:36u	–	12:26u	–	18:30u	–
SEYMOUR	arr	08:24	+12 mins	13:14	+12 mins	19:30	+12 mins
Seymour	dep	08:26	+12 mins	13:16	+12 mins	19:32	+12 mins
Avenel Stn		08:38	+14 mins	13:28	+14 mins	19:44	+14 mins
Euroa Stn		09:00	+16 mins	13:50	+16 mins	20:06	+16 mins
Violet Town Stn		09:12	+18 mins	14:02	+18 mins	20:18	+18 mins
BENALLA Stn	arr	09:28	+20 mins	14:18	+20 mins	20:34	+20 mins
Benalla Stn	dep	09:30	+20 mins	14:20	+20 mins	20:36	+20 mins
WANGARATTA STN	arr	09:53	+22 mins	14:43	+22 mins	20:59	+22 mins
Wangaratta Stn	dep	09:55	+22 mins	14:45	+22 mins	21:01	+22 mins
Springhurst Stn		10:13	+23 mins	15:03	+23 mins	21:19	+23 mins
Chiltern Stn		10:23	+24 mins	15:13	+24 mins	21:29	+24 mins
WODONGA Stn	arr	10:40	+25 mins	15:30	+25 mins	21:46	+25 mins
Wodonga Stn	dep	10:43	+25 mins	15:33	+25 mins	21:49	+25 mins
ALBURY Stn	arr	10:55	+25 mins	15:45	+25 mins	22:00	+25 mins

Legend

★ – First Class available. ☕ – Catering available. arr – Arrive. dep – Depart. d – Stops to set down passengers only. u – Stops to pick up passengers only. Red times represent coach services. Black times represent train services. IC – Inter-City Service. ■ Reservation required on these services.

Coach stop locations

Euroa – Corner Railway and McGuinness Streets, **Wangaratta City** – Cnr Rowan and Ovens Streets, **Wodonga CBD** – Elgin Boulevard.

For more information and reservations visit vline.com.au or call **1800 800 007** (6am – midnight daily)

Effective from Sunday 9 December 2012



Albury/Wodonga – Melbourne (speed restrictions in place)

Albury/Wodonga to Melbourne via Seymour, Benalla and Wangaratta

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	SCHEDULED TIME	POSSIBLE DELAY	SCHEDULED TIME	POSSIBLE DELAY	SCHEDULED TIME	POSSIBLE DELAY
Service No.	8605		8615		8625	
Train/Coach	TRAIN		TRAIN		TRAIN	
Seating/Catering	★☕		★☕		★☕	
ALBURY Stn	06:35	–	12:45	–	17:20	–
Wodonga Stn	06:45	–	12:55	–	17:30	–
Chiltern Stn	07:05	+2 mins	13:15	+2 mins	17:50	+2 mins
Springhurst Stn	07:14	+3 mins	13:24	+3 mins	17:59	+3 mins
Wangaratta Stn arr	07:29	+4 mins	13:39	+4 mins	18:14	+4 mins
WANGARATTA STN dep	07:31	+4 mins	13:41	+4 mins	18:16	+4 mins
Benalla Stn arr	07:56	+6 mins	14:06	+6 mins	18:41	+6 mins
BENALLA Stn dep	07:58	+6 mins	14:08	+6 mins	18:43	+6 mins
Violet Town Stn	08:15	+10 mins	14:25	+10 mins	19:00	+10 mins
Euroa Stn	08:28	+13 mins	14:38	+13 mins	19:13	+13 mins
Avenel Stn	08:49	+15 mins	14:59	+15 mins	19:34	+15 mins
Seymour arr	09:00	+18 mins	15:10	+18 mins	19:45	+18 mins
SEYMOUR Stn dep	09:02	+18 mins	15:12	+18 mins	19:47	+18 mins
Broadmeadows	09:53d	+21 mins	16:03d	+21 mins	21:11d	+21 mins
MELBOURNE						
(Southern Cross)	10:25	+25 mins	16:35	+25 mins	21:40	+25 mins

Legend

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