



The Times

May 2020

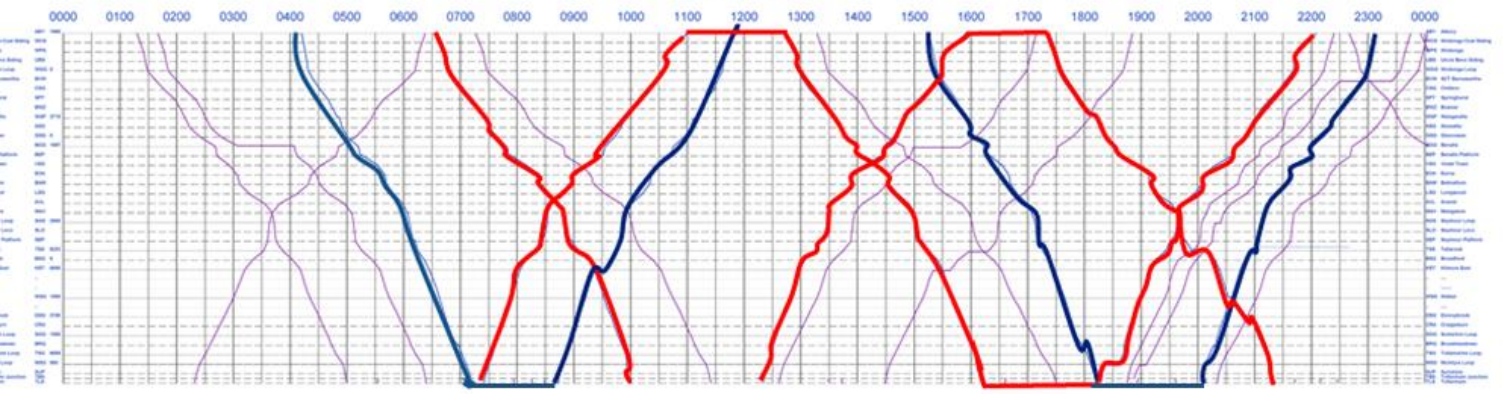
A journal of transport timetable history and analysis

BEFORE XPT DERAILMENT

Albury to Melbourne

MTP Effective from 3rd November 2019

Tuesday

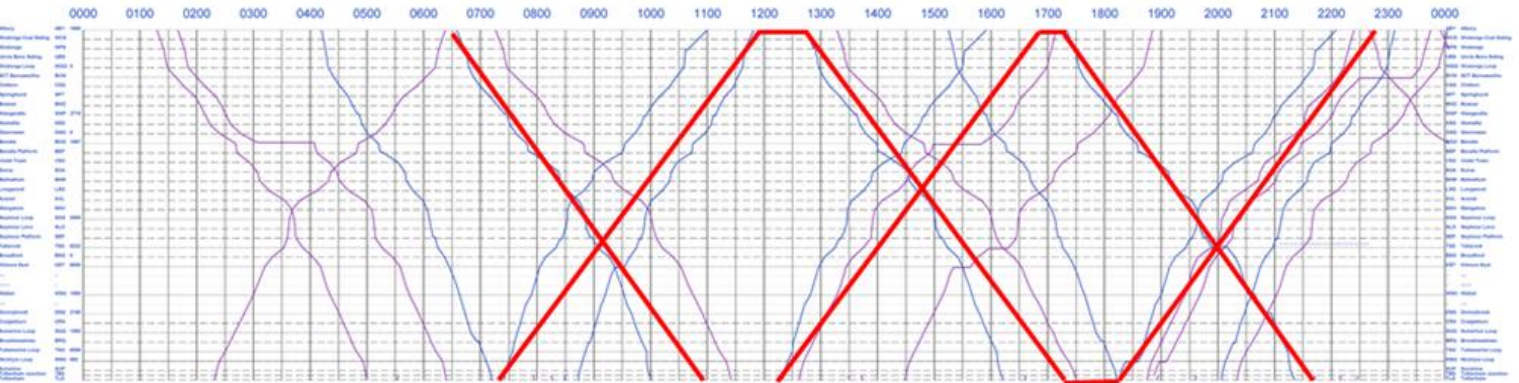


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**Inside: Slow and slower on the NESG
Shipping timetables in the Press**

RRP \$4.95
Incl. GST

The Times

A journal of the Australian Timetable Association Inc. (A0043673H)

Print Publication No: 349069/00070, ISSN 0813-6327

May 2020

Vol 37 No. 05 Issue No. 436

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What happened after this?



At about 7 PM on 20th February 2020, the Sydney to Melbourne XPT Service, Train No. ST23, derailed at high speed at the Wallan crossing loop on Victoria's North East Standard Gauge (NESG) railway line. Tragically, the two crew members in the locomotive cab were killed. Many passengers were injured. The final report by the Australian Transport Safety Board (ATSB) into the **causes** of this accident may be at least a year away. The **effects** of the accident were almost immediate, however. The accident occurred after a decade of controversy over the condition of the NESG track and on the punctuality of trains running over it. The state of the track seems to have had little or no role to play in the accident, but it had a very large role indeed in the way that the media covered the accident. In responses to this media controversy, the Australian Rail Track Corporation (ARTC) quickly introduced an 80 km/h (50 mph) speed limit on the route. After some hesitation, V/Line agreed to keep running its trains, but NSW Trainlink decided to truncate its services at Albury. In this issue, I examine the "before and after" train services on this line, from its earliest operating year of 1879, to April 2020.

James T Wells also makes a contribution on speeds on the VR North East Broad Gauge line, as a follow-up to our March 2020 story on the 1956 Olympic Games timetables.

S-L-O-W on the North East

JAMES T WELLS *comments on the Olympic Games timetables*

AS THIS IS BEING WRITTEN, passenger services on the Victorian North East railway line are in disarray.

This is because of an 80 km/h speed limit imposed by the ARTC with regard to track maintenance issues. Normally, NSW TrainLink's XPT would be allowed 130 km/h.

The article in *The Times* of March 2020 on special services for the 1956 Olympic Games gives us a chance to reflect on what train running was once like on the North East line. Please refer to the tables on the bottom half of p13 of the March issue.

Our reference points for comparisons are the Interstate express services run—generally non-stop—from Melbourne to Albury (306km). The Up Spirit of Progress (S of P) ran this trip in 3hr40min thus averaging 83.4km/h. The Down took 10 minutes longer.

These timings were probably a struggle for the B-class 1500 hp diesel electrics. Maximum allowed speed was 70 mph (say 115 km/h) but there was the climb to Heathcote Junction (altitude 349m) to be dealt with, slow running in the Melbourne suburban area and slow points through Seymour and staff stations (crossing loops) further north.

The trains were heavy – about 550 tons – and, bear in mind, that power cars weren't used- power came from axle-driven generators on each vehicle. The vehicles, though, were equipped with roller bearings and air resistance would have been lower than with wooden rolling stock (refer WTT if shown). Now to turn to the Olympic timings. The first example is 'W.2'

express on November 26th. This was timed at 4hr25min for Wodonga to Spencer St. This is the best part of an hour slower than the S of P. Wodonga is 5km from Albury.

The first point is that train load was not the issue. 'W.2' was shown as consisting of seven vehicles, five of which were the venerable PLs rated at 30 tons weight for purposes of train load compilation. Note that the class distinction letter wasn't used – A for first class, B for second, because it really didn't matter, the seating was the same. BPL's were affectionately known as "Bouncing Passenger Lounges".

The reference to 'dual car' in those tables is worthy of note. Road diesel electric locomotives in Victoria only had automatic knuckle type couplers while many PL carriages were screw coupled. So certain vehicles were fitted with both, on a "swing aside basis" [image below]. The chances are that 'W.2' would have had a W type passenger carriage with dual couplers. This is supported by the reference on page 11 to the anticipated passenger count being 600; i.e. an average of 100 per car—there would have been many standees. If a ZP van was used, speed would have been limited to 60 mph (say 100km/h).

In conclusion, train weight would not have been over 250 tons, less than half the weight of the S of P.

We turn now to the stopping pattern. The * symbol meant that the train was not required to stop for passengers. 'W.2' only had two scheduled stops: Euroa with no arrival time shown and Seymour for five minutes—but not for passengers. The chances are that the

latter was for a crew change. Seymour had refreshment rooms and there would have been a large sign hanging off the platform awning advertising the fact. I wonder how they kept the passengers (some of whom had been on the train for nearly three hours) from grabbing a quick bite—there were no lockable carriage doors in those days. The Refreshment (ref) rooms were therefore probably kept closed for this train.

The sectional running times were slow compared to S of P, e.g. Wangaratta (pass) to Benalla (pass) 33 minutes (S of P 26min); Seymour to Melbourne – 1hr35min, S of P 1hr30min. This is only a five minutes difference but given the light load 'W.2' should have been much faster to Heathcote Junction (from Seymour 46min, but it wasn't - S of P 41min). Strange. Perhaps the S of P timing reflected steam S class performance and not B class.

There are a number of explanations possible for this. The first is that, at the time of issuing the timetable, VR hadn't fully decided on stopping patterns. It is of note that no service was offered to the towns of Chiltern, Violet Town, Avenel or Broadford, although Violet Town is mentioned on the Down timetable as having a stop.

Another explanation is that dwell times were not fully documented in the timetable. Most of the passengers would have been school groups which were presumably allocated a carriage to travel in. The PLs had three doors per side but loading would not have been quick.

A further possibility is that the trains were scheduled for hand staff exchanges at low speed, rather than the use of the automatic exchangers that were installed at stations from Mangalore northward. These permitted exchanges at full—or close to full—speed. The staff was a token that permitted entry to a single line section.



On November 26th, the subsequent train ('BW.2') originated at Beechworth and had additional cars added at Wangaratta, together with a loco change from steam to a B class. It stopped at Benalla and Euroa, but not at Seymour, and was 18 minutes faster than 'W.2', despite having an additional car. The anticipated load was only 450 passengers.

The trains on Nov 27th and 29th were much heavier than those on previous days. BA.2 had 11 passenger cars plus a van – total 12 vehicles. The anticipated load was 1,000 passengers,

so standees would have resulted. Perhaps the authorities thought that four kids could occupy a three person bench seat in a PL car? [Editor—happened to me]. The person on the corridor side would not have been comfortable because there were no armrests and the seat cushion extended into the aisle.

This train was only five minutes slower than 'W.2' from Benalla, a benefit from not having to stop at Seymour.

That the timetabling was rough and

ready, is illustrated by that for C.2, on November 30th, *ex-Cobram, via the Goulburn Valley line*. This train was to be hauled by a T class loco but had eleven vehicles – load 900 passengers. It was given the same time Seymour to Heathcote Junction as the aforementioned 'W.2' – 46 minutes despite the load being much heavier. The power available however, about 60% of a B class, was much lower.

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WODONGA-SEYMOUR-MELBOURNE. SPECIAL TRAINS.								
UP.	W.2	BW.2	TC.2	BA.2	WA.2	MM.2	P.2	C.2
	Express 'B' Loco.	Pass. (No 24 Alt.) 'B' Loco.	Express 'T' Loco	Pass. 'B' Loco	Express 'B' Loco.	Pass. 'T' Loco	Pass. 'T' Loco	Pass. 'T' Loco
	Nov. 26	Nov. 26	Nov. 26	Nov. 27	Nov. 29	Nov. 30	Nov. 30	Nov. 30
	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.	a.m.
WODONGA ... Dep.	6 10							
Barnwartha ... "	6 25*							
Chiltern ... "	6 34*							
Springhurst ... "	6 44*							
Bowser ... "	*A							
WANGARATTA ... Arr.		7 20B						
" ... Dep.	7 2*	7 35			6 20			
Henrowan ... "	7 16*	7 49*			6 34*			
Winton ... "	*	7 57*			*			
BENALLA ... Arr.								
" ... Dep.	7 35*	8 5		6 45	6 53*			
Baddaginnie ... "	7 46*	8 14*		6 55*	7 4*			
Violet Town ... "	7 56*	8 24*		7 7P	7 14*			
Balmattum ... "	8 4*	8 31*		7 17*	7 22*			
EUROA ... Arr.								
" ... Dep.	8 11	8 38		7 29P	7 29*			
Creighton ... "	8 18*	8 45*		7 36*	7 36*			
Longwood ... "	8 23*	8 51*		7 41*	7 41*			
Locksley ... "	8 29*	8 57*		7 47*	7 47*			
Monea ... "	*	*		*	*			
Avenel... ... "	8 38*	9 6*		7 56*	7 56*			
Mangalore ... "	8 45*	9 12*	10 9*	8 3*	8 3*	7 33*	8 0*	8 45*
SEYMOUR ... Arr.								
" ... Dep.	9 0	9 20*	10 20*	8 15*	8 15*	7 45*	8 15*	9 0*
Tallarook ... "	9 12*	9 27*	10 30*	8 25*	8 25*	7 55*	8 25*	9 12*
Broadford ... "	9 25*	9 41*	10 43*	8 38*	8 38*	8 8*	8 38*	9 25*
Kilmore East ... "	9 36*	9 51*	10 54*	8 49*	8 49*	8 20*	8 49*	9 36*
Heathcote Junction ... "	9 46*	10 1*	11 4*	9 0*	9 0*	8 30*	9 0*	9 46*
Wallan ... "	9 51*	10 6*	11 9*	9 6*	9 6*	8 35*	9 6*	9 51*
Beveridge ... "	9 55*	10 10*	11 13*	9 11*	9 11*	8 40*	9 11*	9 55*
Donnybrook ... "	10 1*	10 16*	11 19*	9 17*	9 17*	8 46*	9 17*	10 1*
Craigieburn ... "	10 6*	10 21*	11 24*	9 23*	9 23*	8 51*	9 23*	10 6*
Broadmeadows ... "	10 12*	10 28*	11 30*	9 29*	9 29*	8 57*	9 29*	10 12*
Essendon ... "	10 20*	10 36*	11 39*	9 37*	9 37*	9 5*	9 37*	10 20*
SPENCER STREET ... Arr.	10 35	10 50	11 55	9 50	9 50	9 20	9 50	10 35
" ... Dep.	10 37	11 0	11 58	9 52	9 52	9 22	9 54	10 37
DOWN.			p.m.					
Flinders Street ... "	*	*	*	*	*	*	*	*
JOLIMONT ... Arr.	10 45	11 8	12 7	10 0	10 0	9 30	10 2	10 45
	Z	Z	Z	Z	Z	Z	Z	Z

* Not required to stop for passengers.
B. Attach Cars and change Loco.
A. Bowser to be switched in for the running of **W.2** and 6.15 a.m. (**BW.2**) ex Beechworth.
P. Pick up.
Z. Thence empty cars to Melbourne Yard via Clifton Hill and North Carlton Loop Line

LOADS: **W.2** WODONGA-JOLIMONT. Van, 5PL, Dual Car, 'B' Loco.
BW.2 { BEECHWORTH-WANGARATTA. BCPL, 4PL, Steam Loco.
WANGARATTA-JOLIMONT. BCPL, 4PL, BE, AW, ABW Dual, 'B' Loco.
TC.2 TOCUMWAL-JOLIMONT. Van, 7PL, ZP Van, 'T' Loco.
BA.2 BENALLA-JOLIMONT. Van, 5PL, BCPL, 4PL, Dual Car, 'B' Loco.
WA.2 WANGARATTA-JOLIMONT. Van, 5PL, BCPL, 4PL, Dual Car, 'B' Loco.
MM.2 MERRIGUM-JOLIMONT. Van, 5PL, ZP Van, 'T' Loco.
P.2 { PICOLA-NUMURKAH. Van, 4PL, Steam Loco.
NUMURKAH-JOLIMONT. Van, 8PL, ZP Van, 'T' Loco
C.2 COBRAM-JOLIMONT. Van, 9PL, ZP Van, 'T' Loco.

The Rise and Fall of the North East line

Geoff Lambert

IT IS JUST AFTER 9AM on a summer Sunday in Benalla in the early 1950s. The family are on their way in their [FJ Holden](#) to pick up the grandparents in Goorambat for Sunday dinner back at the farm along the Samaria Rd. Ahead of them, in [Nunn St](#), the railway gates slowly swing across the road. The timing is just perfect—the FJ is first in line. The little girl has a front row seat at the gates as the [Spirit of Progress](#), Australia’s Premier train, sweeps past at 70 mph in a cloud of dust and a shower of sparks from the wheels as they bounce over the crossing. [Sight of Sights!](#) [Sound of Sounds!](#)

The little girl is my future wife, Judy. The things that she remembers most vividly were the sparks from the wheels and the way some wheels actually bounced above the rails as the train flew past.

Victoria’s North East (NE) railway line has had 160 years of vacillating fortunes. Compared with the Western and Northern lines, it suffered from a deficit of gold fields and a false start when the [Melbourne and Essendon Railway Company](#) went belly-up in 1864. It was 1869 before the rails began to push further afield. They reached Wodonga in 1873, but did not reach Albury until 1886.

The VR Public and Working Time Tables always reflected this genesis—Bendigo Main Line first and foremost, then Geelong/Ballarat; Wodonga was third, ahead of Gippsland.

Federation in 1901, when a spirit of national cooperation was briefly in the air, led to a general recognition that



the line was important and that it could facilitate trade between Victoria and NSW. Traffic began to increase and, by about 1920, the NE line was recognised as Victoria’s most important. *The Spirit of Progress* (SoP) in 1938 and Standard Gauge in 1962 boosted this perception enormously. The SoP had streamlining, air-conditioning and the fastest and longest non-stop run in Australia. Never mind that the S-class locomotives were quite inferior to NSW’s 38-class which hauled the trains with which the SoP connected—glitz was what mattered to the public eye. The line held its accolades by default, through the 1980s renaissance until the beginning of the 21st Century, when Victoria’s railway attention began to turn inward again.

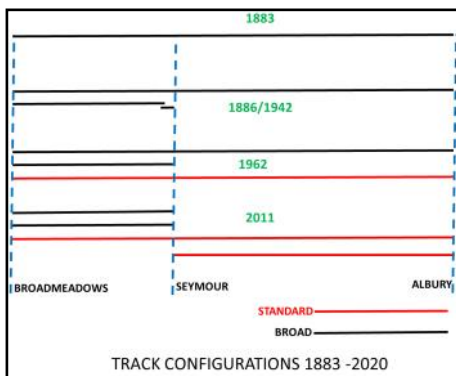
Although conceived as an intercolonial railway, the line naturally served intermediate communities and a number of intrastate branch lines. Some of the latter themselves became “interstate railways”; some also became cross country lines. Thus, at a dendritic level, there were no fewer than 17 terminal stations to be served—Heathcote, Bendigo, Alexandra, Mansfield, Colbinabbin, Gigarre, Toolamba, Echuca, Katamatite, Picola, Cobram, Tocumwal, Oaklands, Yackandanda, Bright, Wahgunyah and Cudgewa. These worthy towns all wanted passenger trains, they all needed goods

trains. They all got both.

The diagram on this page shows the track arrangements (broad gauge in black, standard gauge in red) over the route from its incarnation to today; the table on page 6 shows the single-line crossing loops along the NE line at various periods.

The charts on page 7 show the transit times and number of stops for Down passenger trains on the route for the same 1879-2020 period. The pattern for Up trains is very similar. The two charts at the top of that page show the number of scheduled services and the number of train paths (i.e. scheduled plus conditional trains) in the Working Time Tables or Network Service Plans, including the changes that were made following the XPT derailment. These are, by and large, the numbers of passenger and goods trains in the Broadmeadows-Seymour section, including trains that branched off in that section (Heathcote and Mansfield lines).

A remarkable feature is the constancy of the number of trains running over the Broad Gauge. For about 70 years freight traffic was dominant over passenger traffic but, with the coming of the Standard Gauge line in 1962 and the passenger revolution which occurred in the late 20th and early 21st Century, the balance flipped, but total train numbers remained fairly constant. For a decade or so, between



Crossing Loops Victorian NE line

ARTC km	1883	1886	1941	1962	2011
No of	21	13	22	15	6
14	Essendon			Sunshine	
28_17	Broadmeadows			MacIntyre	MacIntyre
				Tullmarine	
24	Somerton			Somerton	Somerton
26.5	Craigieburn				
32.5				Donnybrook	Donnybrook
46	Wallan			Wallan	Wallan
64	Kilmore				Kilmore
76	Broadford			Broadford	
90	Tallarook				Tallarook
99	Seymour			Seymour	
109.5	Mangalore	Mangalore	Mangalore		
116	Avenel	Avenel	Avenel		
122			Monea		
127.5			Locksley		
137	Longwood	Longwood	Longwood	Longwood	
144			Creighton		
151	Euroa	Euroa	Euroa		
159			Balmattum		
169.5	Violet Town	Violet Town	Violet Town	Violet Town	
183			Baddaginnie		
195	Benalla	Benalla	Benalla	Benalla	
205			Mokoan		
219	Glenrowan	Glenrowan	Glenrowan	Glenrowan	
222			Taminick		
234	Wangaratta	Wangaratta	Wangaratta	Alumatta	
240	Beechworth Jct	Beechworth Jct	Bowser		
249			Boralma		
257.5	Springs	Springs	Springhurst		
271	Chiltern	Chiltern	Chiltern	Chiltern	
279.5	Barnawartha	Barnawartha	Barnawartha		
288			Franklin		
301		Wodonga	Wodonga	Wodonga	

chart No. 4 on our page 7.

Decline

The trend lines on the charts on page 7 don't look too bad— except that, perhaps for the last 10 years or so, they have not predicted the actual transit times very well. The graph of the number of train services in particular (despite its roller-coaster shape) is nevertheless upward. Part of the reason for this is that, in the last 20 to 30 years, the upward surge has been confined to the Broad Gauge services as far as Seymour only. The view of many people further north has been a rather jaded one of “*why can't we have what they are having?*”. To some extent, this is just geographic bad luck—the Wodonga-Albury agglomeration is about three times as far from Melbourne (307 km) than are the major centres on the other well-served lines (an average of 127km). In addition, the total population living along the line is lower and decent-sized towns are much more scattered. See the map and chart below.

The “duplication” of the Standard Gauge beyond Seymour

In the late “noughties” ARTC began to embark on a project to improve running times between Melbourne and Sydney. It was a misconceived attempt to snatch back freight traffic from the Hume Highway. I have previously criticised this concept in my “Field of Dreams” article in *The Times* of [April 2010](#).

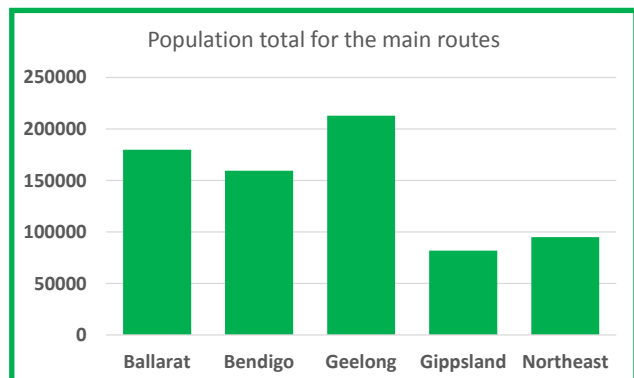
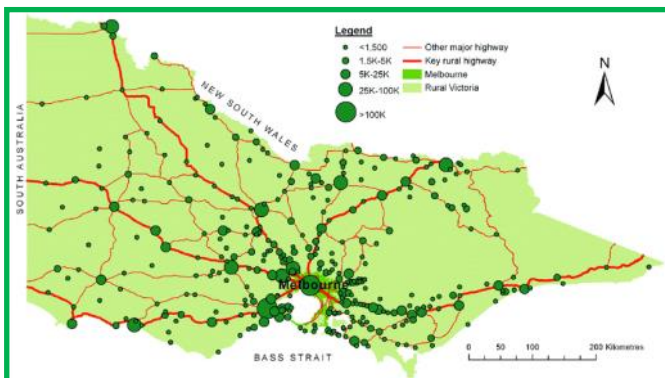
The idea was to partly duplicate the Junee-Somerton single line by constructing 17 seven-km long “Passing Lanes” which would allow them, if trains could be induced to run to time, cross one another without either train stopping—the so-called “running cross”. There were to be 12

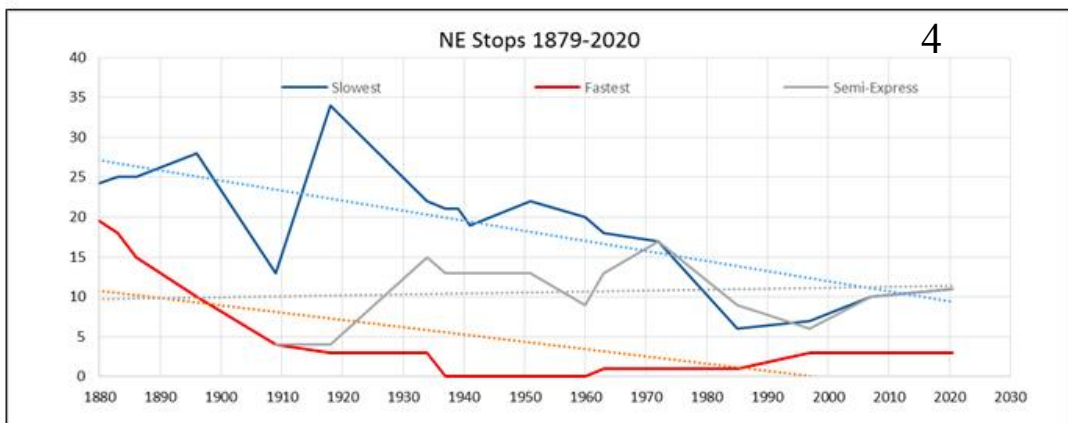
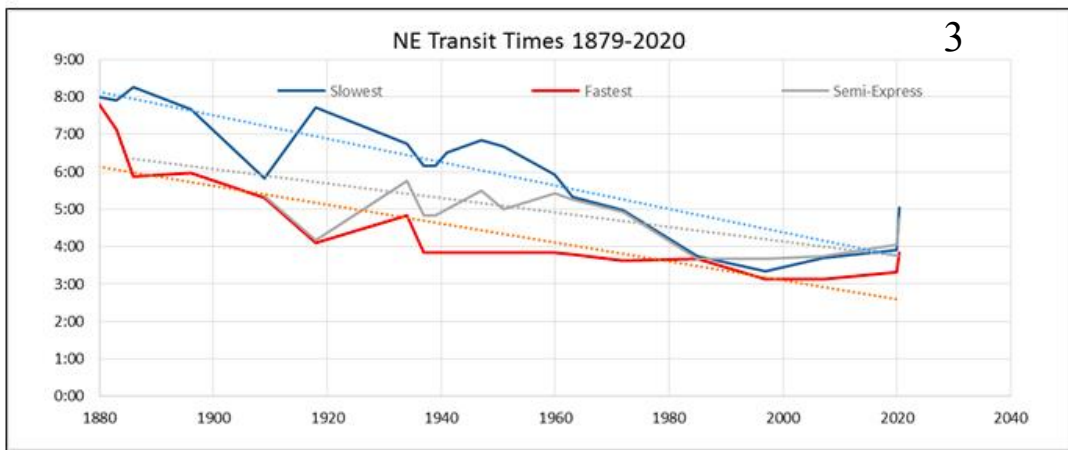
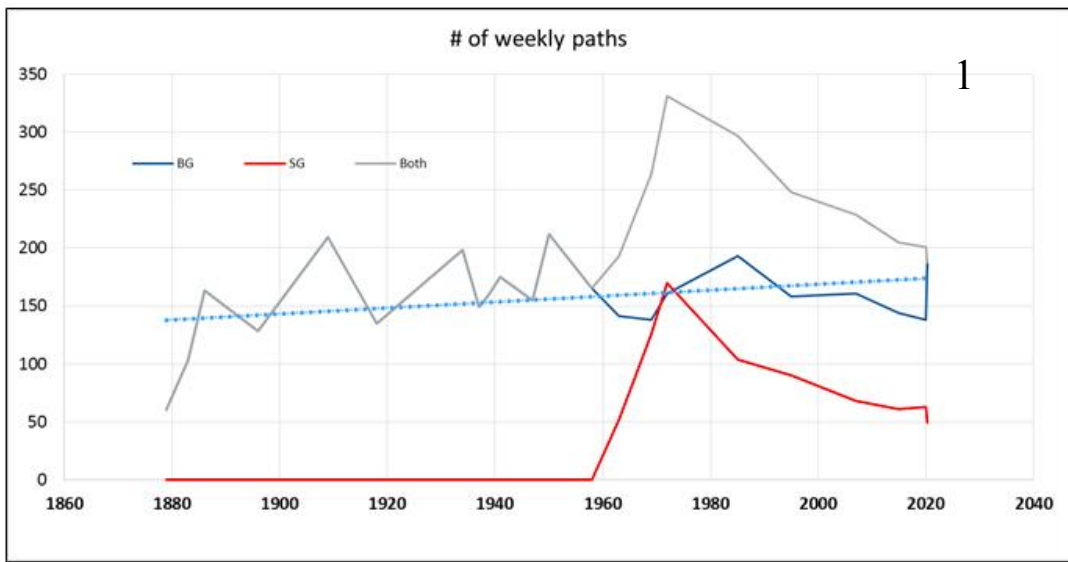
the mid-1960s and the mid-1970s, VR scheduled no fewer than 48 conditional Standard Gauge passenger services per week to supplement the mandatory 7 days per week *Spirit of Progress*, and *Southern Aurora*.

Transit times (shown on page 7, chart 3) steadily decreased (as per the dotted “lines of best fit”) from 1879 to the

appearance of XPTs on the Standard Gauge in about 1997. Transit times have since eased somewhat. The era of non-stop trains lasted from 1938 to the opening of the Standard Gauge line in 1962, when a stop at Sunshine was introduced for the *Intercapital Daylight*.

The number of stops are shown in





Summary Times from 2019 NSP

	Elapsed	Recovery	Crossing	Leeway	Nett	Turn-around	
8605	3:55	0:17	0:00	0:17	3:38	1:45	
8615	3:50	0:17	0:00	0:17	3:33	1:25	
8625	4:03	0:16	0:13	0:29	3:34	3:35	1:35
8610	3:44	0:08	0:00	0:08	3:36	1:30	
8620	3:41	0:07	0:00	0:07	3:34	1:22	
8630	4:11	0:07	0:31	0:38	3:33	3:34	1:26
						3:34	1:30

passing lanes in Victoria and five in NSW. Four of the Victorian Lanes were south of Seymour. The planned arrangement is shown in the map below.

The objective proved to be all but unattainable in practice—there is too much jitter in train times to ever make a “running cross”. Trains travelling at a line speed of 120 km/h take 3.5 minutes to traverse a Passing Lane, so both trains need to be running less than 1.75 minutes off their time for such a cross to work. The problem is compounded more than exponentially where a string of Passing Lanes exists and when one or other train is 1.5 km long (most freights are). On the Junee to Albury and Seymour to Somerton sections of the line, no “running crosses” have ever been scheduled, although a handful have occurred in practice.

In the “Noughties”, the Brumby Government in Victoria was wrestling with ideas to upgrade the Albury passenger train service to the standard that had been put in place for the other main lines. The simple way out for

Brumby was to give or sell the NEBG beyond Seymour to ARTC, which would then convert it to Standard Gauge. This would produce a twin-track SG railway between Seymour and Albury, over which Brumby could run his Albury services. It was a “get out of gaol” card for everybody. An agreement was rapidly signed and the conversion was hastily implemented—much too hastily as it turned out.

Teething problems were expected of course, but was not expected was that they would continue forever. These problems have been analysed in several articles in *The Times* and were still plaguing the line at the time of the 2020 XPT derailment.

Timetables after the conversion

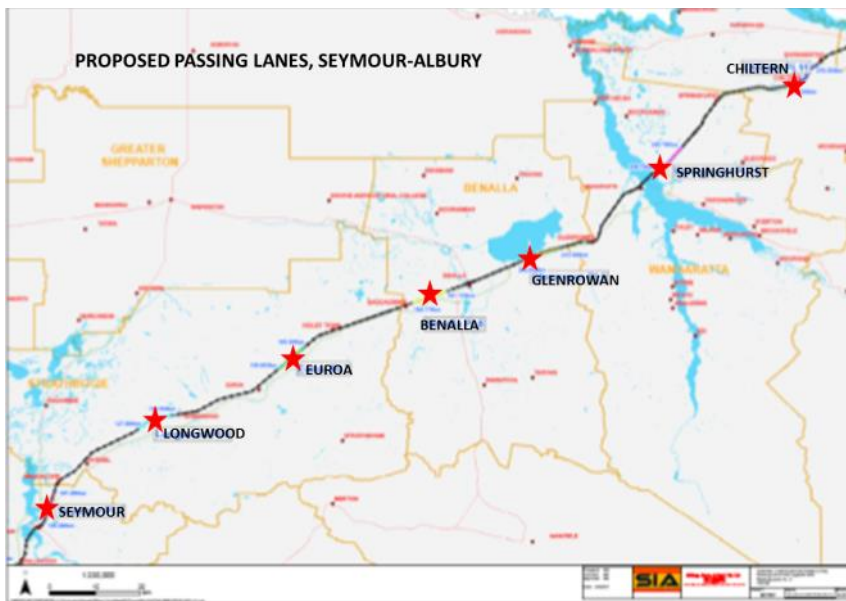
For passenger services, the pattern of train services remained much as it had before the conversion:

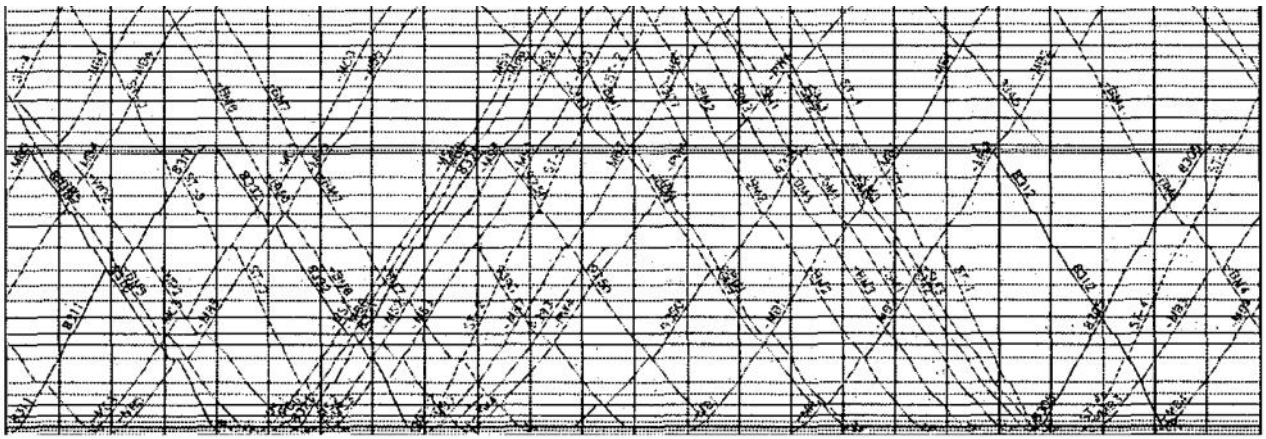
V/Line: morning, lunch time and evening Up and Down trains each day—six paths per day, seven days per week with only minor tweaks from day to day. These are shown in red in the top chart on our cover.

NSW Trains: Morning and evening Up and Down XPT services—four paths per day, seven days per week, always on the same timings. These paths are shown in blue in the top chart on our cover.

There were about seven Up and seven Down freight train paths per day, but no day was identical to another. The freight train numbers have been nearly constant over the last decade. That ARTC’s “*Field of Dreams*” turned into a nightmare must be very galling for it. ARTC wanted the number of freight paths to rise to 16 each way each day in the short term (chart at top of page 9) and much more than that in the longer term. The ARTC’s “Committed Capacity” graphical timetables do not have a strictly linear Y-axis (distance); timing points are much more crowded together south of Seymour. This is why trains sometimes seem to exhibit startlingly high or low speeds.

In the charts on our front cover, the horizontal lines at Albury and Southern Cross (SC) represent “turn arounds” as a train prepares to go back whence it came. The last train in at night, returns as the first train back the next day. The exception to “bouncing” is the Up morning train from Albury [8610]—it does not return to Albury on weekdays, but runs back to South Dynon Loco Depot (SDL) and is replaced by a new train set from SDL, which runs service 8615. This is to allow for maintenance, refuelling and equalising of train trips among car-sets and locomotives (there are four of each). This train-set lays over at SDL for a day and then becomes next day’s 8615. This form of round-robin process means that the train roster (known in NSW as a Zig Zag diagram) repeats only after three weeks. In our digital edition, you can see how this comes about by examining the week-long, multi-coloured train graph on





What ARTC wanted for 2008

our page 10. Under conditions of stress, such as not having all four locos on the go, the shuffle trip to SDL will not happen.

The locomotives are refuelled at SDL on the morning of every third day, by having the previous night's 8630 arrival at SX return to SDL at 0416, refuel and then return to SX to run the 8605 service. I show this by the dotted lines in the zig-zag diagram.

Where did these paths come from?

The NESG is owned by the Victorian entity Victrack and ARTC lease the line from it. Under the terms of the lease, ARTC is granted the power to determine the timetable and to implement it.

It is up to ARTC to determine how many trains the line can carry—its “unconstrained capacity.” The principle of the weakest link applies here—the capacity of the line, end-to-end, is determined by the capacity of the Somerton-Seymour section.

ARTC posits a mixture of train types—Passenger (all coded “XPT”), Intermodal and General Freight (both “SFR”) and steel (“EXP”). These all have different travel times. Squeezing them all in is the work of ARTC’s [timetable software](#) (Railsys, TRIMS, Sketch). The end result is (I suppose) a very densely-packed graphical timetable of paths, which then can be offered for sale to the customers (VLine, NSW Trains, the freight operators). These customers bid—the result are “Committed Capacity” graphical schedules, such as appear on our cover. ARTC doesn’t do this totally independently of its customers—there is a back and forth component to it. In the UK, Network Rail allows no fewer than 18 months for this kind of dickering.

“Tampering” with an in-place TT is therefore a fraught business.

ARTC is not very good at this at all and, in particular does not have the skills or the software to estimate the reliability and robustness of the result. Some years ago, ARTC let a contract to Peter Pudney of the University of South Australia—see “[The Times](#)” of August 2014. Pudney demonstrated how this could be done but it appears ARTC never put his methods into practice. Optimising schedules so that one minimises all the competing requirements is known as an NP-Hard problem—fundamentally this means “impossible”.

A notable peculiarity of the timetabling process is the locking-in of the daily train paths of the passenger schedules. It is what passengers expect of course—they don’t want to be troubled by having to figure out what day of the week it is before reading a timetable. A confounding problem is that Freight train timetables are not so hidebound. Thus, if a freight train runs only one or two days per week and a passenger train is required to go into a crossing loop for it on those days, that passenger train path will then display that cross for every day of the week—even the days when the freight does not run. The most egregious example of this is VLine train 8625, which is scheduled to halt to meet a non-existent train at Tullamarine 5 days per week.

While therefore, there is no such a thing as a “perfect timetable”, the schedules currently in force over the NESG are probably more imperfect and less robust than they could be. In all the troubles that VLine and TrainLink have had, over the years, very few have been attributed to “crossing delays” or other timetable

logistical difficulties.

Somewhere in the process, “recovery time” at Albury and Melbourne has been built into the schedules. This gives a handy buffer for reporting on time running; you can see this in the table on page 8

Travel times from the VLine Network Service Plan (NSP)

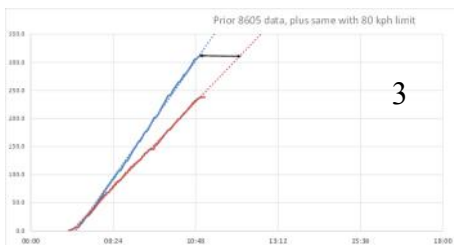
The table at the top of page 8 shows a summary of timings for VLine’s NESG services including the amount of time each service can have “up its sleeve”. When the latter is taken into account, the theoretical running times are remarkably consistent throughout the day in either direction.

The charts need to be turned into tabular WTTs and PTTs for the edification of crews and passengers respectively. At ARTC, this seems to be done by ex-NSW RailCorp staff, who were transferred from RailCorp to ARTC at Mile End in 2005 when ARTC turned its NSW lease into an ownership. This is the reason why—if you’ve ever wondered—ARTC tabular timetables are dead-spitting images of old RailCorp tabulars. These tables are still compiled in Excel, I believe. How VLine produces its tabulars is a mystery, but the end result is often that the two disagree in the detail. The two forms of table are shown side-by-side on page 11.

Aftermath of the 2020 XPT derailment

After the derailment and the consequent imposition of the 80 km/h limit, both VLine and NSW Trains initially indicated that they were not willing to run their trains on the NESG. VLine eventually recanted on this, but NSW did not.

For whatever reason—probably



because ARTC has problems using its planning software to recalculate train paths (see above)—no “revised timetables” were issued by ARTC, V/Line or NSW Trains.

V/Line’s messaging system and its travel app., however, explained things this way “*Passengers should allow 60 to 90 minutes extra travel time*”. That was a dopey thing to say – it would not apply to someone who travelled from Seymour to Broadmeadows (which I assume they are allowed to do). It would have been better to have said “*Passengers can expect their trains to arrive about 60 to 90 minutes late at Albury and Southern Cross.*” Even that has its problems of course.

I think, from the analysis I give below, that the average lateness at destination would have been 55 to 60 minutes.

It is possible, however, to make some estimates, based on the train timings and actual running records from the past. The latter were available from an ARTC “dark site”, sometimes known as the “Crystal Ball”, from about 2010 to 2013. This was when the system was running off CDMA phone system and before the 3G-based ICE radio. During this period, I took the opportunity to write software to download the underlying data and to

analyse it. In particular, I wrote myself a piece of software, a “single train tracker”, which examined the “Crystal Ball” at one-minute intervals for a specific train. From this, I could build an actual graphical timetable for a specified train on a specified day. It was also possible to build a time-speed chart (a kind of dynamometer record) for that train.

An example is the running of train 8605 one day in 2013. This train ran on time for most of its trip and arrived at Albury only 3 minutes late at 11:03.

The speed-time chart for this train is shown in the top chart above (in this chart, X-axis is categorical, but it could have been configured to show km posts). Next, I clip everything above 80 km/h to produce the “curve” in the second chart. I then integrate this curve with respect to time to produce the third chart.

The wobbly red line now represents the integration ... it is the train graph for this train under the 80 km/h limit. This line only takes the train part-way to Albury. The dotted line represents a projection of where the red line would have gone and shows that the train would have reached Albury at 12:01, or 59 minutes later than scheduled. The delay is shown by the double-ended black arrow. The Up (8620) is timed to leave at 12:45, so there is still plenty of time to effect a turnaround and for 8620 to leave on schedule.

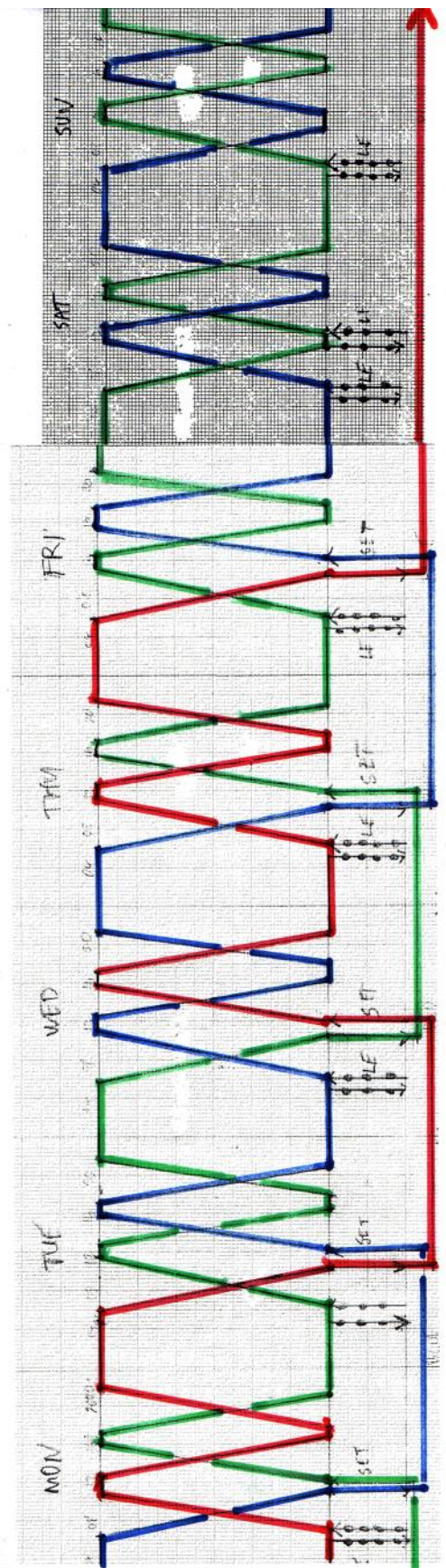
Applying this to all V/Line services and eliminating NSW Train’s XPT services altogether, we finally arrive at the bottom chart on our front cover.

We cannot know for sure whether this is near the mark—but it seems to be so, from various posts on the V/Line app and from lineside observations by railfans in the Seymour area. It is less pessimistic than the “60-90 minutes” mentioned by V/Line. There is nearly always about 20 to 30 minutes spare to allow the return service to depart on time.

At the time of writing, it appeared that the 80 km/h speed limit for passenger trains is to be locked in indefinitely.

Comment on this article – [Letter to the Editor](#), [Facebook](#)

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One week of the NESG Zig-Zag Diagram

Two different timetable styles for V/Line 8605

Left: V/Line
Right: ARTC

Business ID	0631	0631	8605	8647	8611	
Days Run	MF	Sat	Daily	Sat+TuD	Sun+Sat	
Vehicle Formation	5GNCL	5GNCL	N+5N+PCJ	OVERLAND	XPT	
Formed By On Arrival	GN	GN	0604 06:31 SDL	GN	GN	
Train Movement Type	LIGHT_LO	LIGHT_LO	PSNG_SRV	PSNG_SRV	PSNG_SRV	
SOUTHERN CROSS	Pat	04:46 MTR	04:50 MTR	07:05 1	08:05 2	08:30 1
Flyover Junction		D	D	D	5G	D
Macnee Ponds Creek Jct		04:49*	04:53*	07:09*	08:08*	08:35*
SOUTH DYNAMON LOCO		04:52*	04:56*	07:10*	08:11*	08:36*
5th Dynamon Junction		04:55	05:00	07:16*	08:13*	08:38
Sims St. Junction				To Adelaide	To Sydney	
West Footscray Junction				07:17*		
Tottenham Junction				L		
McIntyre Loop				07:22*		
Tullamarine BG Jct				07:25*		
Jacana Flyover				07:30*		
BROADMEADOWS				07:33*		
Somerton Loop				07:34*		
Donnybrook Sth End				07:35/07:36		
Donnybrook Nth End				07:39*		
Wallon SG Loop				07:45*		
Kilmore Sth End				07:47*		
Kilmore Grade Crossing				07:54*		
Kilmore Nth End				08:01*		
Tullaroak Sth End				08:03*		
Tullaroak Loop				08:05*		
Tullaroak Nth End				08:08*		
SEYMOUR SG Platform				08:10/08:11		
Seymour Grade Crossing				08:12*		
Seymour Loop				08:17*		
Mangalore SG				08:22*		
AVENEL				08:24/08:25		
EURDA				08:27*		
VIOLET TOWN				08:32*		
BENALLA				08:34*		
WANGARATTA				08:36		
SPRINGHURST				08:38		
CHILTERN				08:39		
WODONGA				08:40		
Murray River Junction				08:41		
ALBURY	Pat			08:42		
Forms		0601 U6.15 SPE	0601 U6.20 SPE	8620 12.45 SPE		OFF

TRAIN NO	3MPS	6721V	4MP7	4MV2	8605	ST24
LENGTH (Metres)	1500	1000	1500	1500	0	0
DAYS	TUE	TUE	WED	WED	WED	WED
SCHEDULE	SFR	SFR	TRL	EXP	XPT	XPT
PATH TYPE	M	M	M	M	M	M
OPERATOR	PNT	SBR	PNT	PNT	VLP	CLK
Tottenham	arr					
Tottenham Junction	dep	07:09	07:27	07:19	07:14	06:44
	arr	07:10	07:28	07:20	07:15	06:44
	dep				07:25	06:44
Albion Junction	arr					
Sunshine	arr					
McIntyre Loop	arr			07:15	07:27	06:45
Tullamarine Loop	arr			07:19	07:30	06:45
Jacana Loop	arr			07:25	07:34	06:51
Broadmeadows	arr					08:54
Seymour Loop	arr			07:30	07:39	08:56
Donnybrook	arr			07:35	07:39	08:59
Connybrook	arr			07:45	07:45	09:05
Wallon	arr			07:45	07:54	09:17
Kilmore East	arr			07:57	08:05	09:22
Tullaroak	arr			08:05	08:05	09:22
Seymour Platform	arr			08:10	08:20	09:45
	dep			08:26	08:26	09:50
Seymour Loop	arr					
Mangalore	arr			08:12	08:32	09:54
Avenel	arr			08:15	08:37	09:56
Longwood	arr			08:25	08:36	10:07
Furca	arr			08:41	08:49	10:17
Violet Town	arr			08:55	09:00	10:27
Benalla	arr			09:05	09:12	10:25
Wangaratta	arr			09:23	09:30	10:43
Springhurst	arr			09:25	09:33	10:45
Chiltern	arr			09:43	09:43	10:57
Wodonga	arr			09:53	09:50	11:04
Springhurst	arr			09:57	09:53	11:06
SCT Barnawartha	arr			10:00	09:56	11:08
Wodonga	arr			10:25	10:20	11:28
Albury	arr			10:39	10:30	11:49
Albury	arr			10:56	11:02	11:49
FORMS OR DESTINATION	PER	WID	PER	PTK	TERM	CTN



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DAILY COMMERCIAL NEWS

No. 1.

SYDNEY: MONDAY, APRIL 13, 1891.

Vol. 1.

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ALBATROS	Compagnie	May 12	May 15
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ARABIA	P. & O.	May 11	May 15
ARABIA	P. & O.	May 26	May 30

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ARABIA	D.A.G.	May 11	May 15
ARABIA	D.A.G.	May 26	May 30

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Ship	Company	Departure	Arrival
ARABIA	N.L.	Apr. 11	Apr. 18
ARABIA	N.L.	Apr. 26	Apr. 30
ARABIA	N.L.	May 11	May 15
ARABIA	N.L.	May 26	May 30

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ARABIA	H.P. & Co.	Apr. 26	Apr. 30
ARABIA	H.P. & Co.	May 11	May 15
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TASMANIAN STEAM NAVIGATION COMPANY.

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Ship	Company	Departure	Arrival
ARABIA	T.S.N.	Apr. 11	Apr. 18
ARABIA	T.S.N.	Apr. 26	Apr. 30
ARABIA	T.S.N.	May 11	May 15
ARABIA	T.S.N.	May 26	May 30

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UNION LINE
WAIITEMATA
ADELAIDE ... abt. 6th JAN.
SYDNEY ... abt. 19th JAN.
FOR KARATONGA, PAPERI, VALOOFIE, VIA AUCKLAND, NEW ZEALAND.

FEDERAL BRANCH SERVICE
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" SOMERSET "
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FAST MOTORSHIP MONGABARRA
SYDNEY ... abt. JAN. 23
DIRECT
GENOA, DUNKIRK, ANTWERP, GERMAN PORTS, SCANDINAVIA AND GYDNYA

SHAW SAVILL LINE
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ROBAT: m.v. Kamoi, January 15. Thence fortnightly thereafter.

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AUSTRALIA STAR
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P.A.D. LINE
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ADELAIDE ... abt. JAN. 21
MELBOURNE ... abt. JAN. 30

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FOR PORT SAID, GENOA MARSEILLES, DUNKIRK, ANTWERP and GERMAN PORTS

BULLIVANTS
8-4 ORCHARD STREET, ALEXANDRIA, N.W. (Agents in all States)

HOLLAND AUSTRALIA LINE
REGULAR SAILINGS OF FAST MODERN VESSELS TO UNITED KINGDOM AND CONTINENT

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BRITISH WEST INDIES, U.S.A., AND CANADIAN PORTS, VIA PANAMA CANAL.

GANGE
FAST NEW T.S.M.V.
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HOLLAND AUSTRALIA LINE
REGULAR SAILINGS OF FAST MODERN VESSELS TO UNITED KINGDOM AND CONTINENT

PORT QUEBEC
ADELAIDE ... abt. JAN. 18
SYDNEY ... abt. JAN. 23
MELBOURNE ... abt. FEB. 5

CITY OF OTTAWA
PREMANTLE ... abt. FEB. 5
ADELAIDE ... abt. FEB. 19
MELBOURNE (DIRECT) ... abt. MARCH 5

LAUNCESTON (DIRECT)
MULUBINBA
SAILING SYDNEY, 14th JANUARY. SPACE AVAILABLE.

THOMAS PLAYFAIR PTY. LTD.
AVONLS STREET, SYDNEY. Shipping Provisioners and Meat Exporters.

KAIKOURA
ADELAIDE ... abt. FEB. 14
LAUNCESTON ... abt. FEB. 20
MELBOURNE ... abt. FEB. 26
SYDNEY ... abt. MARCH 6
BRISBANE ... abt. MARCH 12

ROBAT
ADELON
ADELON ... abt. FEB. 15
SYDNEY ... abt. FEB. 21

PIONEER REEF
PIONEER GLEN
ADELAIDE ... abt. JAN. 22
MELBOURNE ... abt. JAN. 30
BRISBANE ... abt. FEB. 5

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111 Willoughby Street, Sydney

ROBAT
ADELON
ADELON ... abt. FEB. 15
SYDNEY ... abt. FEB. 21

PIONEER SEA
PIONEER GEM
ADELAIDE ... abt. FEB. 18
MELBOURNE ... abt. FEB. 26
BRISBANE ... abt. MARCH 10

CLAN & SHIRE

(Joint Service)
LINES
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WILHELMSEN LINES
(NORWEGIAN-ARCTIC LINES)
TAKING WOOL, SHEEPSKINS AND GENERAL CARGO.

TITANIA
NEWCASTLE abt. 6th JAN.

THEBEN
ON MAIDEN VOYAGE

ADEN, PORT SAID, GENOA, MARSEILLES, DUNKIRK, ANTWERP, ROTTERDAM, GERMAN PORTS, SCANDINAVIA and GYDNYA

WILHELMSEN AGENT
111 Willoughby Street, Sydney

OCEANIC

(S.S. CO. (MATSON LINE))
FOR LOS ANGELES, SAN FRANCISCO, VANCOUVER
ALAMEDA
MELBOURNE ... abt. JAN. 8
SYDNEY ... abt. JAN. 9

BLUE FUNNEL LINE
IXION
SYDNEY ... abt. 23rd JAN.

HUDRAT, PARKER LINE
T.E.M.V. WANGARELLA
ADELAIDE ... abt. JAN. 21
MELBOURNE ... abt. JAN. 30

AMERICAN PIONEER LINE
UNITED STATES LINES CO.
RAPID SERVICE OF MODERN CARGO VESSELS

BOSTON, NEW YORK, PHILADELPHIA, CANADIAN EAST COAST PORT, NEW ORLEANS, HOUSTON, PORT OF SPAIN TRINIDAD

PIONEER REEF
PIONEER GLEN
ADELAIDE ... abt. JAN. 22
MELBOURNE ... abt. JAN. 30
BRISBANE ... abt. FEB. 5

PIONEER SEA
PIONEER GEM
ADELAIDE ... abt. FEB. 18
MELBOURNE ... abt. FEB. 26
BRISBANE ... abt. MARCH 10

WILHELMSEN AGENT
111 Willoughby Street, Sydney

ARRIVALS FROM OVERSEAS

CALL DATES ARE APPROXIMATE ONLY AND SUBJECT TO ALTERATION DAILY.

FROM U.K., CONTINENT, AFRICA, CEYLON, INDIA, PAKISTAN, MIDDLE EAST

Table with columns: Vessel, From, Agency, Date, Time, Tonnage, Remarks. Lists arrivals from various international ports.

FROM CANADA, U.S.A., SOUTH AMERICA

Table with columns: Vessel, From, Agency, Date, Time, Tonnage, Remarks. Lists arrivals from North and South America.

FROM JAPAN, HONG KONG, MANILA, MALAYA AND INDONESIA

Table with columns: Vessel, From, Agency, Date, Time, Tonnage, Remarks. Lists arrivals from the Far East.

Table with columns: Vessel, From, Agency, Date, Time, Tonnage, Remarks. Lists arrivals from the West Indies and other regions.

EXPECTED ARRIVALS AT SYDNEY

Table with columns: Vessel, From, Date, Time, Agency, Remarks. Lists expected arrivals at Sydney port.

VESSELS LOADING AND TO LOAD

FOR U.K., CONTINENT, AFRICA, CEYLON, INDIA, PAKISTAN, MIDDLE EAST

Table with columns: Vessel, Destination, Date, Time, Agency, Remarks. Lists vessels loading and to load for various international destinations.

FOR CANADA, U.S.A., SOUTH AMERICA

Table with columns: Vessel, Destination, Date, Time, Agency, Remarks. Lists vessels loading and to load for North and South America.

FOR JAPAN, HONG KONG, MANILA, MALAYA AND INDONESIA

Table with columns: Vessel, Destination, Date, Time, Agency, Remarks. Lists vessels loading and to load for the Far East.

ALSO LOADING SYDNEY

Table with columns: Vessel, Destination, Date, Time, Agency, Remarks. Lists vessels loading and to load from other regions.

INTERSTATE VESSELS IN PORT

Table with columns: Vessel, From, Date, Time, Agency, Remarks. Lists interstate vessels in port.

OVERSEAS VESSELS IN PORT

Table with columns: Vessel, From, Date, Time, Agency, Remarks. Lists overseas vessels in port.

WHARF AND SHED STORAGE CHARGES

Table with columns: Vessel, From, Date, Time, Agency, Remarks. Lists wharf and shed storage charges.

