

The Times

August 2017

A journal of transport timetable history and analysis



Inside: Massacre answers
The North Coast Mail
The Canberra Mixed, episode 3
Terrigal

RRP \$4.95
Incl. GST

The Times

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

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

August 2017

Vol 34 No. 08, Issue No. 403

The Times welcomes all contributions. Our Authors' Guide is available on our web-site at <http://www.austta.org.au>
Reproduction Material appearing in The Times may be reproduced in other publications, with an acknowledgement.
Disclaimer Opinions expressed in our magazines are not necessarily those of the Association or its members.
Editor Geoff Lambert 179 Sydney Rd FAIRLIGHT 2094 NSW thetimes@austta.org.au
The Times is posted to our website, two months after publication in paper.

—Contents—

BRENDAN WHYTE	<u>MASSACRE ANSWERS</u>	3
JAMES T WELLS	<u>TWENTY FOUR HOURS ON A TRAIN</u>	4
HILAIRE FRASER	<u>ROUTES 67 AND 68, GOSFORD TO TERRIGAL</u>	10
JIM STOKES	<u>GOULBURN—CANBERRA MIXED</u>	13
GEOFF LAMBERT	<u>YESTERDAY UPON THE STAIR</u>	16



The Great Austral-American Havre-to-Denver bus timetable challenge—answers

BRENDAN WHYTE, MARCUS DUYZEND, & JIM SINCLAIR.

THEY SAY COMMUTING gives you plenty of time to read... but perhaps you're not reading *The Times*! A grand total of one, repeat one, entry was received for last issue's trans-American timetable challenge, and sadly that lone entry was incorrect on all 3 of the questions.

But in lieu of any other, let alone any correct answers, I hereby declare Dean Ogle of Custer, Washington state, USA the winner! Congratulations Dean, and shame on the rest of you.

For the benefit of all, the correct answers, and explanations of how to get them are below.

Q1. How many of these [states] do you go through?

Answer: **c) 3.**

We leave **Havre** at **7 a.m.**, heading to **Miles City**, where we arrive at **12:11 p.m.**, then at **1 o'clock** – having waited for the next bus; all buses leave at the top of the hour – we head to **Rapid City** (in South Dakota the state that has **Pierre** in it), arriving at **4:41 p.m.**, then at **5 o'clock** we leave Rapid City and ride through the northwest corner of Nebraska (the state that has **Lincoln** in it) on our way to **Cheyenne** (in Wyoming, the state that has **Cheyenne** in it, obviously), arriving at **9:51 p.m.**, then at **10 o'clock** we continue to **Denver**, arriving at **11:31 p.m.**: Having travelled the quickest we could with only 3 transfers, our total travel time is **16 hours 31 minutes**. We do not go through the state (North Dakota) which has Bismarck in it.

Q2. Do you see Clementine?

Answer: **a) yes.**

Clementine leaves Denver at **noon** and arrives at **Estes Park** at **1:42 p.m [right]** ., then at **2 o'clock** she heads through Rocky Mtn. Nat'l Park to **Rawlins**, arriving at **5:56 p.m.**, then at **7 o'clock** – she has to lay over for **1 hour 4 minutes**; the *minimum* transfer time is 5 minutes, so she couldn't

catch the 6 o'clock bus – she heads for **Cheyenne**, arriving at **9:05 p.m.**, where *we* arrive at **9:51 p.m.**, happy to see **Clementine**, who's patiently waiting for her **10 o'clock** bus to go see her Aunt Rachel in North Platte. [Clementine heads from North Platte to Rapid City and then to Williston, finally arriving at Havre at 6:54 tomorrow evening.]

Q3. Do you go through Bismarck, Casper, or Idaho Falls?

Answer: **b) no.**

Avoiding Rocky Mtn Nat'l Park, North Platte, and Cheyenne, Rapid City, and Miles City (the bus stations that we went through yesterday), we can do it with only **5 transfers**: at

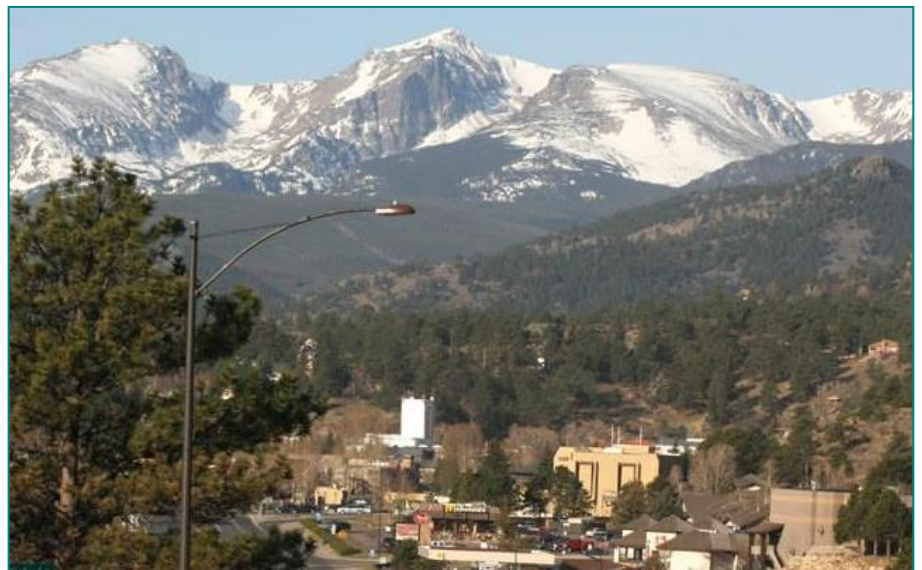
Craig, Salt Lake City [or Rawlins], **Twin Falls, Missoula, and West Glacier**. [Our travel time isn't relevant; it happens to be 29 hours 42 minutes: we arrive after noon on the day after Clementine has arrived. We could have done it quicker through Casper, but without Cheyenne or North Platte we'd have needed **6 transfers**; Bismarck or Idaho Falls would have required 6 transfers as well.]

For your interest, the percentage of people giving each possible answer in the actual 2017 Massacre were (correct answers in bold underline):

Q1: a) 4%, b) 7%, **c) 85%**, d) 4%.

Q2: **a) 49%**, b) 51%.

Q3: a) 40%, **b) 60%**



Twenty four hours on a train

JAMES T WELLS

IN THE LATE 1940S

my late father spent a couple of weeks travelling by train around Queensland. I was too young at the time for him to tell me about it, but we do have a diary note that he found the trains insufferably s-l-o-w.

Many trains in the steam era were very slow, particularly if they were 'mixed'; i.e. conveyed goods vehicles as well as passenger cars, and most definitely so if they shunted at way-side stations to put out or attach goods vehicles.

A NSW example that comes to mind is the North Coast Mail (NCM) which ran from Sydney to Murwillumbah, close to the Queensland border. Overnight mail trains were then still the prime means of service for areas beyond about 500 km from Sydney.

In 1946 this train left Sydney at 8:03 pm and arrived Murwillumbah 24 hr 7 min later. So, except around Christmas, one would leave in the dark and arrive in the dark if going the whole way.

Below is a summary of its running drawn from the 1946 Public Time Table amplified by data in the 1949 Working TimeTable (WTT).

The stopping times are understated because there may have been additional stops for single line crossings.

In 1949 the NCM ran later because it was preceded by the South Grafton Mail. Of interest is that the crosses with the Brisbane Expresses – No 2

and No 4 were on the basis that the expresses went "into the hole", i.e. the loop, to allow the NCM to use the platform road if required. It is interesting that the crosses were scheduled for minor stations where no passenger business was scheduled.

In 1946 the most interesting cross was at Kempsey. The NCM was scheduled to arrive at 6:48 am but the Up Kempsey day train left at 6.40 am, only eight minutes earlier. How could this be, when the nearest crossing station south of Kempsey was over twenty minutes away? The answer would be that the day train would push back past the down end points and then enter number two road to await the arrival of the NCM. Typically it would eventually leave about 6.55 am if the NCM was on time, but there would have been sufficient recovery time in its schedule to allow for the delayed start.

A feature of the timetable was the need for extended stops—not shown in the public timetable—for locomotive purposes, primarily for tender water refilling. Stations that might have had this activity include Nambucca, Urunga and the long-gone Clearfield, between Grafton and Casino.

What is clear from the table is that stops were a major factor in the overall slow speed of the train. Indeed, if the train stopped at all the conditional stops the stop count amounts to a neat one hundred. Between Kempsey and Murwillumbah, the average distance

between mandatory stops was 12km. It is likely that many of the mandatory stops were so scheduled for departmental reasons, e.g. to deliver documents to station officers rather than for passenger or parcel business.

The section to Broadmeadow is along the main northern line which was double track. Stops were Strathfield, Hornsby and Gosford (10 minutes). No extended stop is shown for Broadmeadow- yet it is almost certain that an engine change would have occurred there; 8 minutes has been assumed.

The train was then "express" to Kempsey, because this section was served by the following Kempsey Mail. This train, however, only ran on Tuesday, Thursday, Friday and Sunday nights which meant that major stations such as Wauchope (for Port Macquarie) got no overnight service on the non-Kempsey Mail nights. But wait ... see more below.

Yet there were many stops for the NCM. Quite quaint by today's circumstances were stops at Waratah and East Maitland, as well as Maitland, then known as West Maitland.

All the stops following to Mt George, the last station before Wingham, were marked "f" meaning "stops regularly to pick up but does not set down". The more distant ones had "p" which meant: "Stops to pick up passengers for Kempsey and beyond and to set down sleeping berth passengers ...". The sleeping berth passengers could only book on the day of travel for these stations, which would have been very limiting.

Note that all were mandatory stops; even at such minor stations as Mount George and Langley Vale but I suspect that, in practice, the station officer would have waved the train through if

Sector		D'tance km	Time		No of Stops		Stop Time	Speed (kmh)	
From	To		Total	Net	Mand.	If req.		Total	Net
Sydney	Broadmeadow	162.9	3:16	2:53	4	-	0:23	49.9	56.5
Broadmeadow	Kempsey	340.6	7:56	6:49	17	-	1:07	42.9	50.0
Kempsey	Casino	301.4	8:35	7:31	26	18	1:04	35.1	40.1
Casino	Murwillumbah	129.8	4:20	3:43	10	25	0:37	30.0	34.9
		934.7	24:07	20:56	57	43	3:11	38.8	44.7

Note: Stop time includes time at end of sector.

there were no passengers to be picked up. Extended stops were scheduled for West Maitland, Dungog, Gloucester and Taree.

The time of 1 hr 3 min shown in the table for stops in this section includes 27 minutes at Kempsey which would have been for breakfast. The only refreshment service on mail trains was the wake up service of a cup of tea for sleeping berth passengers provided by the conductor. Twenty-seven minutes really was not a long time for a meal stop; one was probably lucky to get 10 minutes at a table to eat the meal. Take-aways were unheard of then, but the service would have been very well-organised and fast.

From Kempsey the train stopped everywhere- but with many of the stops being "if required". Morning tea was served at Coffs Harbour (15 min), lunch at South Grafton (25 min) and afternoon tea at Casino (15 min).

Shown on pages 8 and 9 are the timetables for the Casino-Murwillumbah branch section. Of interest is the service to the Ballina branch which closed in 1949. It is amazing how long some of these passenger-unfriendly services persisted in Australia, especially in Queensland.

Also of interest is the connection off the Brisbane Express for Lismore. Booking restrictions applied on the Express – 14 days in advance for Lismore.

Note the extended stops of 22 minutes at Lismore and 15 at Bryon Bay; at least the latter had a refreshment room.

As stated, one reason for the train being so slow is the number of stops, both mandatory and conditional. Beyond Casino the ratio of the latter to the former was much higher than for Kempsey to Casino, probably because the Lismore to Murwillumbah section had a stopping all stations train earlier in the day. The Northern Rivers area was/is highly populated by Australian rural standards, but nevertheless having 34 intermediate stations on the branch seems excessive. This amounts to an average distance between stations of only 3.7 km.

There were quite a few 'stations' not

served by any passenger train: Currawee past Leycester, Halpin's after St. Helena, Henderson's after Yelgun, and Farthing's Banana Platform and DeVille's after Upper Burringbar.

The NCM made only two mandatory stops that look strange today. These were at Bungabbee and Booyong, both because they were crossing (staff) stations. The latter was not the junction for the branch to Ballina; this was at Booyong Junction to the west. There is nothing at all at Bungabbee today.

By 1949, the connection off the Brisbane Express had been extended to Murwillumbah, so the branch had exceptional passenger train service by Australian branch line standards. Departures from Lismore were at 7.11 am (Casino at 5.53 am as a mixed train), 1.51 pm, and 5.48 pm; a good spread. The spread was not quite so good out of Murwillumbah for the return trip: 6.55 am, 12:05 pm and 4:05 pm.

In 1946, the return journey of the NCM took even longer than the forward journey. Departure from Murwillumbah was at 6.10 am for a 7.00 am arrival in Sydney. Breakfast was at Byron Bay (?), morning tea at Casino, lunch at Grafton, afternoon tea at Coffs Harbour and dinner at Kempsey.

This journey was nearly the longest trip by time in NSW from Sydney either in a single train or by connection. Broken Hill at 1,124 km was the most distant station but the journey only took about 22 hours because the diesel "*Silver City Comet*" was quite

fast across the plains. It was a day service with a mail train connection at Parkes. The 1946 timetable did not feature a slow overnight service to/ from Broken Hill.

What about Inverell you ask? This station, at 819 km from Sydney was not so far as Murwillumbah, but the mail train journey, three days a week, took 21 hr 33 min. On three other days the train was a mixed from Moree and the overall time stretched to 25 hr 28 min, with an average speed from Moree of about 20 kmh. No "x" for change of trains is shown at Moree; perhaps that was a mistake.

The NCM was famous for going into Newcastle for dinner. It left Sydney at 3.15pm, all other overnight services left after 7 pm apart from the Brisbane Express via Wallan-garra (1.15 pm). The Newcastle diversion, which required a train reversal, did not occur in the opposite direction.

The timetable is quite silent on the availability of sleeping cars on mail trains. I presume that they all had them but it is most unlikely that the NCM's car or cars went north of Kempsey.

My thanks to Geoff Lambert for provision of WTT data.

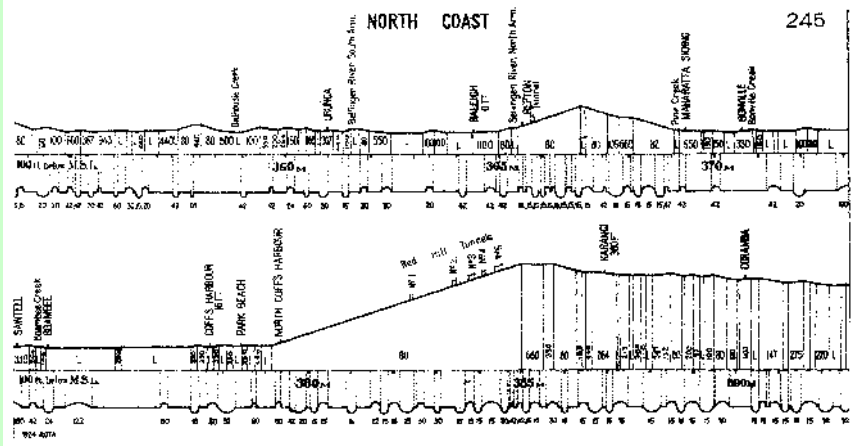
Comment on this article –[Letter to Editor](#), [Facebook](#)

Return to [Contents](#) Page



The North Coast Line.

The NSW North Coast line runs from Maitland to Brisbane – about 800 km. When built arguably it served no useful transportation service except for access to inland areas such as Gloucester and Casino. The section from Taree to Grafton in the early twentieth century would have been well served by coastal shipping.



The North Coast Steam Navigation Company and the Illawarra Steam Navigation Company dominated the trade north and south of Sydney until the 1920s, when a reasonable road opened along the south coast and a railway along the north coast. They survived this competition, though, and the North Coast Company was even able to compete with the train on speed with its two express liners, the first and second TSS *Wollongbar* steaming from Sydney to Byron Bay faster than the mail train and carrying their passengers in rather more comfort. The coastal passenger traffic came to an end after Pearl Harbor, and indeed the Japanese torpedoed the second *Wollongbar* in 1943 with the loss of all hands. After 1945 both companies were confronted with enormous wartime losses, greatly increased costs for new ships, and ever better and more efficient trains and trucks. They ceased services north from Sydney in 1954 and to the south in 1956, thereby ending one of Australia's oldest maritime traditions. Source: <https://www.environment.gov.au/heritage/ahc/publications/linking-a-nation/chapter2#coastal-shipping>

One suspects that defence was a prime factor in the railways' completion, as was the case for the Trans Australia railway across the Nullarbor, built at much the same time. Coastal areas did not want to be dependent on shipping with aggressive enemy navies about.

Built it was—but not to a high standard. Ride the two car diesel to Dungog from Newcastle and it becomes clear, after crossing the Hunter river that, with the curvature, this is not going to be a super fast journey. But the curvature here is mild compared to which follows. Between Gloucester and Taree there is a continual procession of curves generally of 300m radius, with some as sharp as 240m, reducing speed to 50 to 60 kmh. The countryside is hilly around here. The pity is that on the easier coastal areas there are fewer curves, but many are still of tight radius and there is little point in trains speeding up between them.

Grades are not too much of a problem because the bulk of the line was built when the NSW Railways were duplicating main lines and often providing deviations to ease grades to typically 1 in 75. The ruling grade on the coast is 1 in 80 both directions as far as Grafton, and 1 in 50 beyond.

Traffic became quite heavy during the Second World War. Safe-working was by electric staff (token) and there were a lot of crossing stations; in 1949, 51 between Maitland and Casino. Presumably all were staffed 24 hours a day, 7 days a week. Staffing must have been difficult to arrange; for example Bulliac between Gloucester and Taree, is about 20 km from the former and has always been just a 'locality'.

Nowadays with Centralised Traffic Control, and fewer but longer passing loops, things are very different. There are three passenger trains (XPT) passing through Kempsey daily in each direction and about the same number of freights.

The future of the line is uncertain. Much of the freight is from Victoria to Queensland. This will divert to Inland Rail if that project gets built. It's possible that the small amount of Sydney – Brisbane freight will also be diverted.

Sydney to Newcastle—continued.

DOWN.	WEEK-DAYS.	247	35	115	63	299	117
		West Coast	Mid Coast	Ball Mac	Through Coast	North Coast	Through North Coast
Byebye	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
...
...

When boats are worked by two engines only one of them use take water at Newcastle, the other at Sydney.

Sydney to Newcastle—continued.

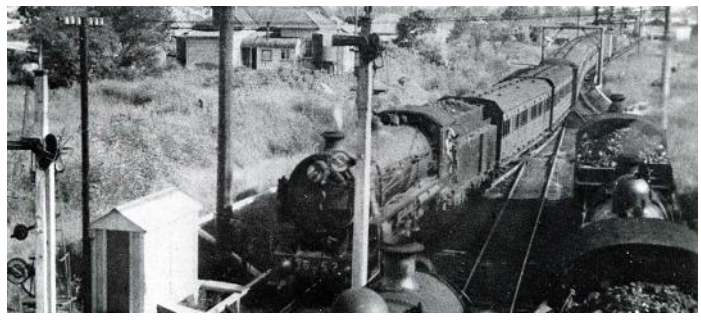
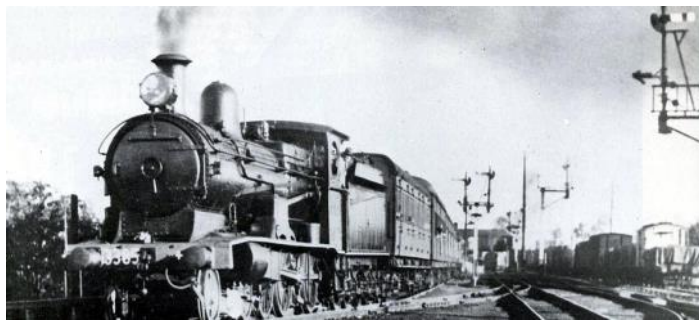
DOWN.	WEEK-DAYS.	185	18	417	11	173	63
		Coast	Coast	Ball Mac	North Coast	Coast	Through Coast
...
...

6 Boats worked at Newcastle only between Sydney and Newcastle.

Newcastle and Broadmeadow Yards to Singleton and Cessnock (South Mainland Railways)—continued.

DOWN.	WEEK-DAYS.	127	127	777	163	265	147
		North Coast	North Coast	North Coast	North Coast	North Coast	North Coast
...
...

6 Boats worked at Newcastle only between Sydney and Newcastle.



Maitland—Tarco—continued.

DOWN.	WEEK-DAYS.	177	177	15
		Coast	Coast	Coast
...
...

Tarco—Cott's Harbour—continued.

DOWN.	WEEK-DAYS.	3	31	27	11	69	15
		Coast	Coast	Coast	Coast	Coast	Coast
...
...

Cott's Harbour—continued.

DOWN.	WEEK-DAYS.	123	27	11	47	67	69
		Coast	Coast	Coast	Coast	Coast	Coast
...
...

DOWN. WEEK-DAYS.	203	11	61	63
	Pay Bus.	North Coast Mail.	Goods.	Goods.
	† p m	p m	Mons. and Thurs. p m	Mons. and Thurs. p m
CASINO†††	arr. ...	4 19	...	...
	dep. 1 25	4 34	8 45	11 55
Old Castlet†††	arr. ...	4 39	...	12 0
	dep. 1 30	4 42	8 50	12 25
North Casino*	...	a	...	...
Naughton's Gap*	...	a	...	...
Bentley*	...	a	...	...
Bungabbee†††	arr. 1 50	5 5	9 24	12 59
	dep. 1 53	5 7	9 31	1 6
Fernside*	...	a	...	...
Leycester Quarry Siding*	...	...	...	...
Leycester*	...	a	...	...
Cubawee*	...	a	...	...
Tuncester*	...	a	...	...
Shell Siding*	...	a	...	...
LISMORE†††	arr. 2 13	5 31	10 2	1 37
	18	50-130	10 55	2 18
North Lismore**	...	a	...	...
Woodlawn College*	...	a	...	...
Woodlawn*	...	a	...	...
Bexhill†††	arr. ...	6 6	11 16	2 39
	dep. ...	6 8	11 23	2 57
Eithan**	...	a	...	...
Laureidale*	...	a	...	...
Booyong Jet.	arr. ...	...	...	...
	dep. ...	6 24	11 43	3 16
Booyong†††	arr. ...	6 26	11 50	4 26
	dep. ...	a	...	67
Naabna*	...	a	...	...
Binna Burra*	...	a	...	...
Bangalow†††	arr. ...	6 45	12 15	4 51
	dep. ...	6 49	12 22	4 58
Talofa*	...	a	...	...
St. Helena*	...	a	...	...
Halpin's Banana Platform*	...	...	...	...
BYRON BAY†††	arr. ...	7 10	12 53	5 28
	dep. ...	7 25	1 47	5 36
Quarry Siding*	...	a	...	...
Tyagarah*	...	...	...	...
Myocum*	...	a	...	...
	arr. ...	7 47	2 14	6 3
Mullumbidgee††††	arr. ...	7 51	2 34	6 30
	dep. ...	...	...	...
Billinudgel (Block Post)	arr. ...	...	...	...
Yelgun*	...	a	...	...
Grabbe's Creek*	arr. ...	...	...	...
	dep. ...	a	...	...
Mooball*	arr. ...	...	...	...
	dep. ...	a	...	...
Water Tank	...	...	...	...
Burringbar††††	arr. ...	8 18	3 10	7 6
	dep. ...	8 22	3 27	7 28
Upper Burringbar*	arr. ...	...	...	...
	dep. ...	a	...	...
Farthing's Banana Plat.*	arr. ...	a	...	...
Stokers*	arr. ...	a	...	...
	dep. ...	a	...	...
Dunbible*	arr. ...	...	...	...
MURWILLUMBAH††††	dep. ...	8 50	4 4	8 5
	...	280	...	...

Refers as No. 204.

Timed to be worked by 50 class engine.

Timed to be worked by 50 class engine.

† Runs on alternate Tuesdays, commencing 29th November, 1940.

MURWILLUMBAH—CASINO.

UP. WEEK-DAYS.	14	204	136	50	
	North Coast Mail.	Pay Bus.	Goods.	Pick-up.	
	a m	† p m	Tues. p m	a m	
MURWILLUMBAH†††† dep.	6 55		...	8 10 ⁵³	
Innabie*	a		...	...
Stokers*	a		...	...
Farthing's Banana Plat.* ..	a		...	...
Upper Burringbar*	a		...	...
Burringbart††† { arr.	7 23		...	9 17	
Water Tank	7 26 ⁵³		...	9 41 ⁵⁵	
Mooabali*	a		...	...
Crabbe's Creek**	a		...	...
Velam*	a		...	...
Billinudgel (Block Post) ..	a		...	...
Mullumbimby††† { arr.	7 52		...	10 41	
Myocum*	7 55		...	11 6	
Tyagarah**	a		...	...
Quarry Siding*	a		...	...
BYRON BAY††† { arr.	8 15		...	11 43	
Halpin's Banana Plat.* ..	8 32 ⁵⁵		...	12 30 ⁵⁹	
St. Helena*	a		...	...
Talofa*	a		...	...
Bangalow††† { arr.	8 54		...	1 12 ¹⁷	
Binna Burra*	8 56		...	2 37 ^{18.17}	
Nashua*	a		...	...
Booyong††† { arr.	9 14		...	3 9	
Booyong Jct.	9 17 ⁵³		...	3 24	
Laureldale*	a		...	...
Eltham.**	a		...	...
Bexhill††† { arr.	9 32		...	3 51	
Woodlawn*	9 33		...	4 6	
Woodlawn College*	a		...	...
North Lismore**	a		...	...
LISMORE††† { arr.	9 49		...	4 36	
Shell Siding*	10 3	3 0	5 36 ¹¹	Tues. Excepted 5 40	Tues. 6 7
Tuncester*	a		...	...
Cubawee*	a		...	...
Leycester*	a		...	...
Leycester Quarry Sdg.* ..	a		...	...
Fernside*	a		...	...
Bungabbee††† { arr.	10 29	3 17	6 7	6 26	6 51
Bentley*	10 32	3 20	6 14	6 33	7 6
Naughton's Gap*	a		...	...
North Casino*	a		...	...
Old Casino ††† { arr.	10 55		6 48	7 19	7 50
CASINO††† { dep.	10 57	3 34	7 10	7 34	8 5
arr	11 0	3 38	7 15	7 39	8 10
dep.	11 15		8 55	...	

† Runs on alternate Tuesdays, commencing 29th November, 1949.

Worked by 50 class engine and conveys full goods load.

No. 50 is timed to convey Goods load worked by 50 class engine, and is allowed 25 minutes Murwillumbah to Burringbar, 18 minutes Burringbar to Mullumbimby, 5 minutes Mullumbimby to Byron Bay, 5 minutes Byron Bay to Bangalow, 5 minutes Bangalow to Booyong, 5 minutes Booyong to Bexhill, 10 minutes Bexhill to Lismore, 15 minutes Lismore to Bungabbee and 10 minutes Bungabbee to Old Casino.

Routes 67 and 68 – Gosford to Terrigal

by Hilaire Fraser

RECENTLY, I RECEIVED FROM Busways a copy of the Routes 67 and 68 timetables, covering Gosford to Terrigal, North Avoca and Wamberal, effective 19 February 2017. Terrigal is a popular and scenic seaside community on the Central Coast of New South Wales and is served by Busways route 67 Gosford to Terrigal and North Avoca and route 68 Gosford to Terrigal and Wamberal. The North Avoca terminus is located at Elgata Av & North Avoca Pde with some trips extending to Bradleys Rd & Scenic Hwy. These routes provide train connections to Sydney and Newcastle, at Gosford, and serve the large Erina Fair shopping complex.

Daytime service on each route is hourly providing a half-hourly service to Terrigal and approximately half-hourly in peak periods, providing a fifteen minute service to Terrigal. Hourly evening services from Gosford operate Monday to Thursdays until 10.40pm, Fridays until 11.17pm, Saturdays until 12.20am and Sundays until 9.50pm. Most evening services operate as 67 Gosford-Terrigal. However, the 6.40pm, 7.14pm and 8.40pm

Monday to Friday trips from Gosford and the 7.45pm Saturday and Sunday trips operate as 68 and detour to cover Brunswick Rd, Hastings Rd, Aspen Av normally served by 67, Willoughby Rd and Windsor Rd (see map provided). All inbound evening trips operate as 68 Terrigal-Gosford via Terrigal Drive. Also as shown on the map, some early outward trips and late inbound trips miss the Kings Av diversion.

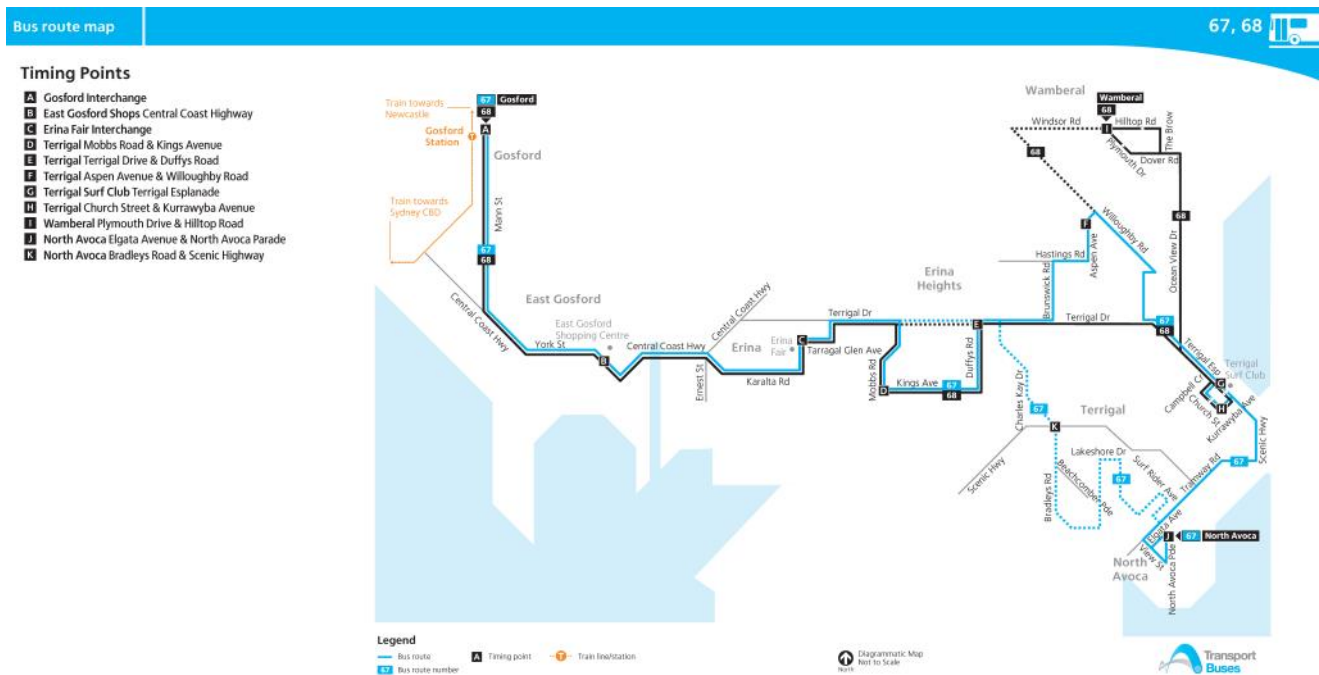
Included with this article is page 7 of the Busways timetable Monday to Friday timetable, available in print or on their website. The 6.28am and 8.20am trips from Gosford operate to Terrigal via Charles Kay Dr (annotated "C") with the 6.28am trip operating via Scenic Highway, omitting Bradleys Rd & Lakeshore Dr (annotated "J") as shown on the map. These trips depart Bradleys Rd, North Avoca at 6.44am and 8.49am respectively. The 7.05 am, 7.45am (school days) 7.55 am (school holiday) 68 services operate to Wamberal via Brunswick Rd, Hastings Rd, Aspen Av, Willoughby Rd & Windsor Rd (annotated "A") to commence in-

Gosford to Terrigal, North Avoca and Wamberal

Bus Timetable
67 68

Includes accessible services
 Effective from 19 February 2017

ward trips from Wamberal at 7.29, 8.22 and 8.28 respectively. From 8.50, 67 and 68 settle into a nice rhythm operating half-hourly to Terrigal and hourly to North Avoca and Wamberal. The 2.20pm service from Gosford does a school days diversion from



Monday to Friday										
Route Number	67	68	68	68	67	68	67	68	67	68
A Gosford Interchange	06:28	07:05	S07:45	H07:55	08:20	08:50	09:19	09:49	10:19	10:49
B East Gosford Shops Central Coast Highway	06:33	07:10	S07:52	H08:02	08:27	08:58	09:27	09:57	10:27	10:57
C Erina Fair Interchange	...	07:16	S08:00	H08:10	08:35	09:06	09:35	10:05	10:35	11:05
D Terrigal Mobbs Road & Kings Avenue	...	...	S08:06	H08:16	08:41	09:12	09:41	10:11	10:41	11:11
E Terrigal Terrigal Drive & Duffys Road	C06:42	A07:21	SA08:10	HA08:20	C08:45	09:16	09:45	10:15	10:45	11:15
F Terrigal Aspen Avenue & Willoughby Road	...	A07:24	SA08:17	HA08:23	...	...	09:48	...	10:48	...
G Terrigal Surf Club Terrigal Esplanade	...	...	...	...	...	09:21	09:53	10:20	10:53	11:20
H Terrigal Church Street & Kurrawyba Avenue	C06:54	...	...	...	C09:02	09:22	...	10:21	...	11:21
I Wamberal Plymouth Drive & Hilltop Road	...	A07:29	SA08:22	HA08:28	...	09:30	...	10:29	...	11:29
J North Avoca Elgata Avenue & North Avoca Parade	J06:48	...	...	...	08:56	...	09:58	...	10:58	...
K North Avoca Bradleys Road & Scenic Highway	J06:44	...	...	...	C08:49	...	...	...	11:08	...

Monday to Friday (continued...)										
Route Number	67	68	67	68	67	68	67	68	67	68
A Gosford Interchange	11:19	11:49	12:19	12:49	13:19	13:49	14:20	14:50	15:27	15:40
B East Gosford Shops Central Coast Highway	11:27	11:57	12:27	12:57	13:27	13:57	14:28	15:00	15:37	15:50
C Erina Fair Interchange	11:35	12:05	12:35	13:05	13:35	14:05	14:36	15:08	15:45	15:58
D Terrigal Mobbs Road & Kings Avenue	11:41	12:11	12:41	13:11	13:41	14:11	14:43	15:15	15:53	16:06
E Terrigal Terrigal Drive & Duffys Road	11:45	12:15	12:45	13:15	13:45	14:15	14:47	15:19	15:57	16:10
F Terrigal Aspen Avenue & Willoughby Road	11:48	...	12:48	...	13:48	...	14:51	...	16:01	...
G Terrigal Surf Club Terrigal Esplanade	11:53	12:20	12:53	13:20	13:53	14:20	V14:56	15:26	16:06	16:15
H Terrigal Church Street & Kurrawyba Avenue	...	12:21	...	13:21	...	14:21	...	15:28	...	16:16
I Wamberal Plymouth Drive & Hilltop Road	...	12:29	...	13:29	...	14:29	...	H15:33	...	16:24
J North Avoca Elgata Avenue & North Avoca Parade	11:58	...	12:58	...	13:58	...	15:04	...	16:14	...
K North Avoca Bradleys Road & Scenic Highway	...	...	...	...	14:08	...	...	...	S16:28	...

Monday to Friday

Gosford to Terrigal, Wamberal & North Avoca

Terrigal Dr via Havenview and Junction Rd (annotated "V"). The 2.50pm service from Gosford extends to Wamberal in school holidays, evidently continuing from Terrigal as a school service on school days and the 3.27 service from Gosford extends to Bradleys Rd, North Avoca on school days.

Also included in this booklet is the 67 timetable from 10 April 2017 to 23 April 2017 (school holidays) obtained from www.transportsw.info.

Curiously 67 and 68 are produced as separate timetables so the customer needs to search for two timetables to get Terrigal trips. Notice the page provided does not include 11.19am and 12.19pm trips, these are in a separate pane for Gosford to Gosford and inbound trips so once again the customer needs to do two searches. The 68 www.transportsw.info timetable is laid out in the same way, so the customer has to search two timetables and

four panes to find all Terrigal trips.

Covering two routes, the 67 and 68 timetable still provides interest for the timetable analyst. The full timetable is more useful than the fragmented timetables found on www.transportsw.info.

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

Return to [Contents](#) Page

67

Gosford to North Avoca via Terrigal (Loop Service)



Valid: 10 April 2017 - 23 April 2017

Creation date: 11 April 2017

NOTE: Information is correct on date of download.

Monday to Friday									
Day Restrictions	AA56								
Gosford Station	10:19	13:19	17:40	18:22	18:52	19:40	21:40	22:40	23:17
Central Coast Hwy after Adelaide St, East Gosford	10:27	13:27	17:48	18:28	18:58	19:45	21:45	22:45	23:22
Erina Fair Interchange, Erina	10:35	13:35	17:56	18:35	19:05	19:51	21:51	22:51	23:28
Mobbs Rd before Kings Av, Terrigal	10:41	13:41	18:04	18:41	19:11	19:56	21:56	22:56	23:33
Terrigal Dr at Holmes Rd, Terrigal	10:45	13:45	18:08	18:44	19:14	19:59	21:59	22:59	23:36
Aspen Av near Arnold Cr, Terrigal	10:48	13:48	18:12	18:48	19:18	20:03	22:03	23:03	23:40
Terrigal Surf Club Terrigal Esp, Terrigal	10:53	13:53	18:17	18:53	19:23	20:08	22:08	23:08	23:45
North Avoca Shops Elgata Av, North Avoca	10:58	13:58	18:23	18:59	19:29	-	-	-	-
Bradleys Rd at Scenic Hwy, Terrigal	11:08	14:08	18:32	19:07	19:37	-	-	-	-
Saturday									
Gosford Station	16:30	18:00	18:45	20:45	21:45	22:20	23:20	00:20	
Central Coast Hwy after Adelaide St, East Gosford	16:37	18:07	18:51	20:50	21:50	22:25	23:25	00:25	
Erina Fair Interchange, Erina	16:44	18:14	18:56	20:55	21:55	22:30	23:30	00:30	
Mobbs Rd before Kings Av, Terrigal	16:51	18:21	19:01	21:00	22:00	22:35	23:35	00:35	
Terrigal Dr at Holmes Rd, Terrigal	16:55	18:25	19:04	21:03	22:03	22:38	23:38	00:38	
Aspen Av near Arnold Cr, Terrigal	16:58	18:28	19:07	21:06	22:06	22:41	23:41	00:41	
Terrigal Surf Club Terrigal Esp, Terrigal	17:05	18:35	19:14	21:12	22:12	22:47	23:47	00:47	
North Avoca Shops Elgata Av, North Avoca	17:11	18:41	-	-	-	-	-	-	
Bradleys Rd at Scenic Hwy, Terrigal	17:21	18:51	-	-	-	-	-	-	
Sunday & Public Holidays									
Gosford Station	16:40	17:40	18:40	19:45					
Central Coast Hwy after Adelaide St, East Gosford	16:47	17:45	18:45	19:50					
Erina Fair Interchange, Erina	16:53	17:51	18:51	19:56					
Mobbs Rd before Kings Av, Terrigal	16:59	17:56	18:56	20:01					
Terrigal Dr at Holmes Rd, Terrigal	17:03	18:00	19:00	20:05					
Aspen Av near Arnold Cr, Terrigal	17:06	18:03	19:03	20:08					
Terrigal Surf Club Terrigal Esp, Terrigal	17:13	18:09	19:09	20:14					



The Goulburn – Canberra Mixed Trains (part 3)

JIM STOKES

I WAS INTERESTED TO READ Jim Wells' and Victor Isaacs' dialogue on the Goulburn – Canberra Mixed trains of the 1960s in the June 2017 *Times*. Indeed 44 Mixed was the first NSW train I ever saw, when I watched it depart Canberra behind 3268 with a quite substantial goods load on 17 May 1961. I lived in Canberra from 1966 to early 1969 and travelled on 39 and 44 quite often in the course of steam odysseys further north, or trips back from Melbourne on the *Spirit of Progress*. I concede that their appeal to the general travelling public was limited, but to a railfan a 32 or 36 on the front end was more than adequate recompense for long pauses in the middle of nowhere in sub-zero temperatures. I thought a few additional notes on these curious trains might be of interest.

The NSW Day Trains

39, 44 and 43 trains were offshoots of what might be called the third tier of NSW country passenger services, namely the more or less all-stations (apart from suburban areas) day services to major country centres. The first two tiers were of course the overnight mail trains and the air-conditioned daylight trains, both of which had connections on at least some days of the week to almost every part of the system. The day trains were



more limited in scope. In the public timetable of 20 November 1960 the Northern day train ran to Kempsey and Werris Creek on alternate weekdays and the Western line had a morning Up and afternoon Down Orange service connecting with the electric interurbans at Lithgow. On the South, there were morning and afternoon trains in each direction between Sydney and Goulburn and some additional trains or rail motors from Sydney or Campbelltown to Picton and Moss Vale. The morning Up and afternoon Down Goulburn trains were distinguished by the title of Southern Highlands Express. This was an ambitious title for a

train that stopped at every station between Goulburn and Campbelltown on the Up and omitted only intermediate stations between Campbelltown and Picton on the Down—but you could forgive almost anything for a train hauled by a 38-class Pacific. The morning Down and afternoon Up Goulburn trains had a rail motor connection to/from Harden on three days a week, while 43 and 44 made some attempt to provide a connection to/from Canberra/Queanbeyan.

Canberra's Melbourne connection

Rail travel between Canberra and Melbourne has always been bedeviled by the extremely roundabout route from Canberra to Yass Jct via Goulburn. It was not until a direct bus connection was provided to the Intercapital Daylight at Yass Jct that Canberra got a viable rail connection with Melbourne. Before the standard gauge *Spirit of Progress* was introduced in 1962, the night services were dire unless you could afford a sleeper. In the public timetable of 20 November 1960 the *Melbourne Express* unloaded passengers from Melbourne (other than those lucky enough to be in the through



sleeping car from Albury on four nights of the week) at Goulburn at 6.45 am and they departed for Canberra at 7.12 am on 39 Mixed, eventually arriving in Canberra at 11.12 am; they thus took four hours to travel 65 miles, with a 35 minute stop at Queanbeyan *en route*.

In the Melbourne direction, the Canberra portion of the Up Cooma Mail, including the Albury sleeping car, left Canberra at 8.35 pm on Mondays, Wednesdays, Fridays and Saturdays and arrived at Goulburn at 10.59 pm. The Melbourne passengers departed southwards on the Melbourne Express at 11.38 pm, but Sydney passengers sat in Goulburn until 1.06 am, when they continued northwards attached to the Cooma portion of the Cooma Mail.

As well as ending the change of trains at Albury, the standard gauge *Spirit of Progress* substantially improved the Canberra service on four nights a week by including an air-conditioned through carriage with sleeping and first and second class sitting accommodation. In the public timetable of 16 April 1962, the northbound *Spirit* arrived at Goulburn at 5.31 am and number 39, now upgraded to a Passenger, left Goulburn at 6.00 am and took a mere two hours to get to Canberra. In the Melbourne direction the Canberra portion of the *Cooma Mail*, with the *Spirit* through carriage attached, left Canberra at 8.40 pm on Mondays, Wednesdays, Fridays and Saturdays and arrived in Goulburn at 10.52 pm to connect with the southbound *Spirit* departing at 11.22 pm.

The only problem with the through carriage was that there was normally only one of it, so that passengers who could not get a seat in it (or who travelled on a non through carriage night) had to transfer at Goulburn in winter into a freezing NSW car. If possible, we would round up some of those miracles of nineteenth century luxury the foot-warmer canisters, lay them along the seat and go to sleep against them. All the same it was a lot better than sitting up all night on the Pioneer coach on the death-defying goat track of the old Hume Highway or paying a first class air fare – back in those days



there were no economy air fares to Canberra, which was nice for politicians and public servants travelling at the taxpayer's expense, but not much use for students. The through carriage service was increased to run on every night except Sundays in February 1969, but became a permanent casualty of the operational chaos on the NSW Railways system in 1974.

44 Mixed

This train and its Sydney connection gradually came up in the world, so that by the early 1970s they had reached a standard that would have been considered fairly reasonable in the early 1920s. In the public timetable of 20 November 1960, it left Canberra at 10.00 am on Mondays, Wednesdays, Fridays and Saturdays as a Mixed and continued from Queanbeyan at 10.57 am as a Passenger. It arrived at Goulburn at 1.14 pm, where passengers had ample time to sample the culinary delights of the refreshment room before departing for Sydney at 2.25 pm for a 4 hour 29 minute journey to Sydney (stopping if required at all 25 intermediate stations to Campbelltown, thence Lidcombe and Strathfield only). The same times appear in the timetable of 16 April 1962, but by the timetable of 17 October 1965 the locomotive-hauled train between Goulburn and Sydney had been replaced by a two-car diesel set, which shaved 37 minutes off the journey time. Apart from shaving 7 minutes off the schedule, 44 itself remained on essentially the same timetable throughout the 1960s. As Victor noted, the train was sped up somewhat in 1972, leaving Canberra at 11.00 am. Rather miracu-

lously, it managed to survive until 1981, when the northbound Cooma Mail was rescheduled to run in the morning, with a bus connection from Canberra. In the 1960s, the passenger accommodation seemed to consist generally of a 12-wheeled composite side-corridor car and a passenger brakevan. In the early 1970s the train often included recently-refurbished side door/brake car HCX632, which was later acquired by ARHS (ACT).

The big attraction of 44 in 1966 and early 1967 was that it was often steam-hauled. In the autumn of 1966 the motive power was generally a 36-class 4-6-0, but in the winter of 1966 Goulburn had three steam heating fitted 32-class 4-6-0s (3214, 3216 and 3326) to work the *Kosciusko Ski Express* (otherwise known as the Skiers' Special) and they also worked 39 and 44.

43 Mixed

This train had a long history. In the working timetable of 25 November 1951 it left Goulburn (as 33 Mixed) at 4.10 pm, connecting off the morning day train from Sydney which had arrived at 3.23 pm. It arrived at Queanbeyan at 8.34 pm, left again as a pickup goods at 10.00 pm and eventually arrived at Cooma at 4.05 am the next morning. In the public timetable of 20 November 1960 it left Goulburn at 3.15 pm (only 9 minutes after the arrival of the day train from Sydney, so virtually no time for refreshments) and eventually terminated at Queanbeyan at 7.33 pm. In the timetable of 16 April 1962 (now numbered 43) it arrived at Queanbeyan at 7.22 pm. In the timetable of 17 October 1965 it

had been downgraded to a Goods, which left Goulburn at 2.30 pm and arrived at Queanbeyan at 6.17 pm. The train had thus been sped up a little and, because it left Goulburn an hour after the diesel train arrived from Sydney, passengers had time for lunch. There was little change in times until the timetable of 14 February 1972, when it was extended to Canberra to arrive at 7.05 pm. The journey time from Goulburn to Canberra was 4 hours 35

minutes, with a cross with the Up *Canberra-Monaro Express* at Farrer loop and 21 minutes at Queanbeyan. I am not sure when this train finally disappeared from the public timetable, but it was probably around the mid 1970s.

At first sight you wonder why they even bothered to put this train into the public timetable. However I guess it served two purposes. First, because the Canberra-Monaro Express stopped

only at Tarago and Bungendore, 43 did offer a day option for people travelling southwards to the other six stopping places between Goulburn and Queanbeyan. Second, on days that 44 was running, people could use 44 and 43 to have a couple of hours shopping in Goulburn.

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

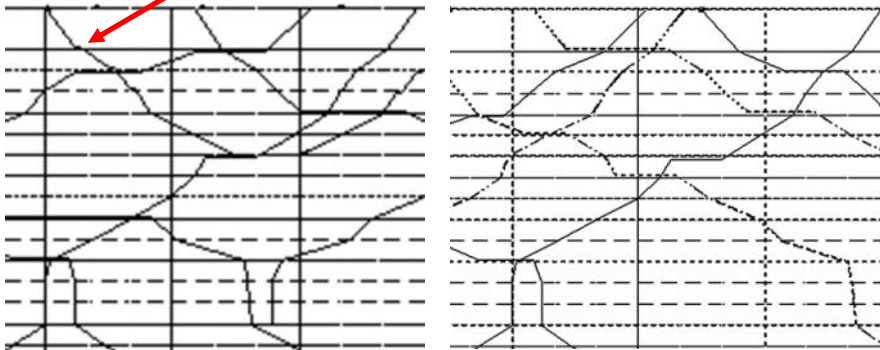
Return to [Contents](#) Page



Yesterday upon the stair

*Yesterday, way up there
I met a train that wasn't there
It wasn't there again today
Oh, how I wish it'd go away.*

GEOFF LAMBERT



I refer (of course) to train V953 from Hamilton to Dungog and return five days per week. On each of those 5 days, the southbound Brisbane XPT (NT32) waits from 16:38 to 16:50 (12 minutes) for V953 to arrive on its Down journey [left, above]. After V953 arrives, NT32 sets off for Sydney and, at 5 PM, the Dungog train returns to Hamilton, one block behind the XPT.

There is nothing unusual in this. The sting in the tail is that NT32 also waits until 16:50 at Dungog at weekends, even when neither V953, nor any equivalent service is on the line [right, above].

“Why is it so?” asks Julius Sumner-Miller.

We can easily advance two reasons for why this is so:

1. The XPT is due to pick up passengers, if necessary, at Dungog and must therefore wait for potential passengers who might show up at the last possible minute.
2. The XPT is due to cross, “on the fly” a north-bound Intermodal train at Kilbride at 17:04. The Intermodal is due at Kilbride at 17:00. Were the XPT to leave Dungog at 16:38, it would have to wait at Kilbride from 16:55 for the Intermodal to arrive and get itself into the loop.

Better to always wait at Dungog, then.

This is one aspect of train running which I noticed on a Christmas trip to the North Coast, with my new Christmas present (a smart phone, with the TripView timetable app) in hand. The company which runs the train tracking software for ARTC (4-TRAK) has recently made available its real-time data feed to app developers. This means it is now possible to track NSW Trains services all over the ARTC and John Holland network, including in Victoria and Queensland.

This is a partial throwback to NSW State Rail’s discontinued *CountryNet* tracking system. ARTC inherited CountryNet and put up a “dark” website with real-time information (maps and tables) on it. When this system was upgraded to 4TRAK (aka ICE), it went behind a firewall and was no longer accessible to the public. Now we have at least a partial return to the past practice and can follow the location of any NSW Regional train on its network. The facility has been available for Metropolitan public transport for most of 2016, subsequent to the decision by Transport for NSW (TfNSW) to provide a real-time GTFS (General Transit Feed System) feed to supplement its “static” GTFS feed. The static GTFS feed, which has been around for several years, has been discussed in this magazine previously. The phone apps have always known where a public transport vehicle is supposed to be at any time; now they can contact TfNSW and find out from the real time GTFS, where it really is. Readers have doubtlessly used—or at least seen—other people using these apps to figure out whether the bus for which they are waiting is on time and even whether there are seats available. ARTC’s 4-TRAK system is not based (so far as I know) on a GTFS system, but nevertheless is still searchable by phone apps.

So I spent my Christmas-New Year of 2016-2017 studying the running of the North Coast XPTs, which rumbled across the Bellinger River bridge at Repton (where I was ensconced) six times per day. Christmas is a great time to do detective work on train reliability because one can compare the “busy days”, when all freight and passenger trains are running, with the “quiet” Public Holiday days, when the freight trains are not clogging up the line. This became a definite fixation and my fascination with NT32 continued for two

months.

It will not surprise anyone to discover that the XPTs have a much better time of it on Public Holidays. On the next page are “cumulative lateness” curves for the Up Brisbane Express (NT32) on “quiet” days (orange) and on “busy” days (blue).

These charts are very similar to those that were discussed in *The Times* of August 2014). The amount of time lost by NT32 on busy days (about 2.5 minutes for every hour of travel), is very similar to what it was in 2009. According to ARTC, the total of time lost on the Sydney Brisbane line (Passenger and Freight inclusive) was about 7 minutes per hour in the third quarter of 2016 (ARTC’s Key Performance Indicators website). The largest part of this statistic is said to be due to “above rail” or train operating company causes.

Current and immediate past graphical (aka Customer Commitment Chart) and tabular ARTC [Master Train Plans](#) are always available on the ARTC website. Older versions are available from ATA’s Distribution Service. Readers will remember that I regard graphical timetables as vastly superior to tabular timetables because all of the trains over all of the line, for a whole day are available in a single image. That is just what we want to see here.

ARTC divides its chart into two segments:—the 4-track Islington Junction to Maitland section and the single track Telarah-Brisbane section. The former is populated by so many trains that it is difficult to separate one from another at the scale herein shown. The original, of course, is tablecloth sized or larger. I generally print mine at A3 size, as provided by ATA.

The “Lower North” section of the North Coast line carries far more trains than the Far North Coast. The former carries Newcastle regional trains, (untabled) ballast trains and Stratford area coal trains as well as the XPTs and the Brisbane Intermodal and steel trains. There is also a thrice-weekly cement train to and from Grafton. From January 2017, there has also been a four times weekly SCT “non-intermodal” freight train.

On a busy day (e.g. Tuesday), the number of trains in each segment is

- Newcastle-Maitland 157
- Telarah-Stratford 33
- Stratford-Brisbane 16 (18 since 23rd January)

I am concerned here with the two latter sections. Now, 16—or even 33—doesn’t seem like a lot but, believe you me, even 16 is a handful. Consider for instance that your average train over these two sections travels for 10 hours in completing its journey and meets, on an average, about 8

other trains. There could be as many as 72 crosses that have to be planned and managed for the Far North Coast trains each day-16 trains, each meeting eight others divided by two. That's three crosses per hour or one every twenty minutes. The task is big enough to require two "boards" at ARTC Train Control.

Of the sixteen trains on the Far North Coast, 6 are rather short XPT passenger trains. The other ten are 1.5 km long and mostly "intermodal" or steel trains. By ARTC policy, passenger trains have precedence over freights at crossing loops. The latter must take the loop roads. While there are 50 crossing loops that can accommodate an XPT, there are only 32 that can hold a 1.5km train (see rear cover). In a perfect world, with perfect and optimized timetables, this would all click into place.

But the world is far from perfect and, in timetabling, very far from perfect. Anything can go wrong.

What could possibly go wrong? Considering only the Brisbane-Sydney XPT, the following could go wrong:

- Late Brisbane departure due to late Brisbane arrival
- Late Brisbane departure due to peak hour restriction imposed by Citytrain
- Up XPT held in "timetabled" loops due to late-running Down trains
- Up XPT held back in loops, to allow an opposing train to cross
- XPT held awaiting "Line Clear" from a preceding train
- Extended dwell times at station stops due to passenger dithering, passenger illness or extended "station work".
- Dithering by, or other mishaps with, (e.g.) train crewing.
- Speed restrictions due to track-work or high temperatures (WOLOs)
- Train controllers "re-prioritizing" trains
- Track fault
- Train fault
- Fire
- Flood

During the observation period of ten weeks, nearly all of these things happened.

Brisbane Late Departure a/c late arrival: this appeared to occur on both the 23rd and 24th of December, although only the latter was definitely confirmed as due to a late arrival

Brisbane Late Departure a/c missing Brisbane peak period. There were no instances of this. Things would have to be

very dire for this to occur in summer, because the departure time is 04:55 Brisbane time. This is another one of those situations where "one size fits all" inasmuch as the curfew is probably not required on weekends either.

XPT held back to cross opposing train.

This occurred with the late-running XPT was held back at Nambucca to cross the early-running Down Cement train No. 4621N. This put 4621N further ahead and it was heard passing through Repton nearly an hour early.

XPT held at loop for late-running Down train. This occurred on 29th December, when the XPT was held at Glenapp to cross a late running SB1 Intermodal train.

Prolonged Station stop. On 24th December, NT32 was held at Grafton for a total of 63 minutes for unknown reasons. In general, on most days, extended station stops are par for the course, with the usual dwell of 2 minutes being extended to an average of nearly 4 minutes. The total delay on all days, and all stations, due to this cause usually amounts to 30 minutes-but only on "busy" days for some inexplicable reason. None of these extended stops appeared to be related to single line crosses (which rarely occur within station limits anyway).

Waiting line clear. There were three instances of the late-running NT32 being held at Maitland (presumably) to allow a Newcastle Suburban service to precede it (22nd, 23rd and 24th December).

WOLO speed restrictions. There were no delays definitely attributable to this, but Down service NT35 incurred a 30 minute delay for this reason on 29th December.

Track Fault. On 29th December, the XPT was delayed 35 minutes between Kendall and Taree by a "Track Fault".

XPT held in loop for a cross. On 29th December the already late XPT (see previous entry) appeared to be put into one of the loops between Dungog and Telarah. This was probably to meet its opposing number NT31 which itself was running late. Further late running occurred due to an unexplained extended station stop at Broadmeadow.

If we turn our attention back to Dungog, we find the following average statistics on lateness:

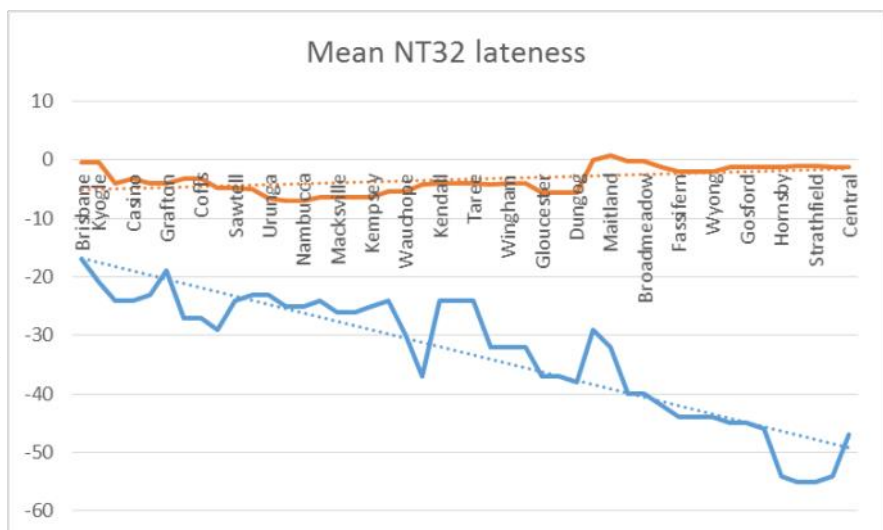
	<u>Arrive</u>	<u>Depart</u>
Quiet day	6 min late	on time
Busy day	38 min late	29 min late

So—the timetabled 12-minute wait at Dungog can be used as "padding" against late-running. A similar "blip" occurs for NT32 at Grafton where the timetabled stay is 17 minutes – although this is for reasons other than crossing an opposing train.

TfNSW publishes "[Service Alerts](#)" for TrainLink's Regional Services. These make lamentable reading. In the period when I examined the running of NT32 (23rd December to 28th February, there was not a single instance where Late Alerts did not need to be posted at some part of the day. TrainLink's definition of late is 11 minutes or more. It aims to have 78% of trains to arrive within 10 minutes of timetabled time. I regret to say that NT 32 met this target only 27% of the time. Only 4 trains (14%) arrived "dead to time".

How to cope with all of this?

Mostly trains just "muddle through"- but with a gut feeling that "there has to be a better way". A few years ago, ARTC engaged the services of the University of South Australia to analyze what made timetables unreliable and how a more robust timetable could be devised. Although



Criterion	XPT	Pass	Inter-modal	Coal
Earliest	-19	-1	-122	-97
Latest	53	29	142	123
50 percentile	8	9	8	14
Range	27	10	130	111

the consultants didn't say so explicitly, the request seemed to be related to freight trains only. ARTC provided them with a set of train running records for several lines, including the NSW North Coast. The consultants split the records of on-time running into two parts:

Departure delays (these ranged from 2 hours early to 6 hours late).

Accumulated running delays as the trains moved through the single line sections along the lines (these ranged from a gain of 36 minutes to a loss of 51 minutes). In all, two-thirds of all freight trains in the analysis lost time. There tended to be many stretches of line where things nearly always got worse over successive block sections—but also stretches where the opposite occurred.

In building robust timetables, the running delays are of the greater value, although trains which start late tend to “lose their paths” – which may make them later or could enable them to pick up time, as in the Dungog example at the beginning of this article. The analysts processed these two sets of data to produce a statistic of how variable both were—in statistical terms—the “variance”.

By running one thousand simulations (for each train) with slightly different starting times randomised according to the known data and with the observed variances of intra-section times, the analysts were able to model the sorts of things that might happen in practice. By examining the simulations to determine which were “better” in terms of on-time arrival, they devised guidelines for building more “robust” timetables. Just as importantly—they could build flexible timetables that allowed the greatest scope for recovery when things DID go wrong. The analyses were very dependent upon assumptions of what train controllers normally did to recover from timetable glitches in transit—such as shifting the crossing points for trains that were running out of course.

This analysis assumed that the controllable feature was just the starting time—the end result was a set of recommendations of when trains ought to start in order to produce a more robust train plan. [See *The Times*, [August 2014](#) for images of the charts that came out of these analyses.]

The consultants published a chart—an “extract” of the North Coast Line data (Johns River to Telarah, it seems) that came out of the TPAT software. It is unclear whether this was real data from past experience or one of the suggested timetable improvements which the consultants made. The chart [Page 19, upper] shows a graphical train plan (top part) and the expected variations that one might expect in the arrival times at Telarah [bottom part]. These are S-shaped or “sigmoid” curves, which show:

- the earliest time at which a train might be expected to show up at Telarah—the lower left-most flat part of each lateness curve (the “toe”).
- the latest time at which the train might be expected to arrive at Telarah—the upper, rightmost part of each curve (the “shoulder”).
- the time at which the train would arrive at Telarah on or before 50% of the time (50th Percentile”).

The lateness figures derived from this graph are summarised in the Table, above.

We see that XPTs and Pass (Railcar) trains are rarely expected to arrive early, but may be expected to arrive up to 53 and 29 minutes late respectively. Half of all of these trains can be expected to arrive no more than 8 or 9 minutes late. Intermodal

and coal trains, although they are usually expected to arrive close to time (8 or 14 minutes late), can be expected to arrive from as much as two hours early to two hours late.

It is unclear whether ARTC acted upon this advice, but there has been little increase in reliability since then and no evidence of a timetable shake-up. The consultants took pains to say (politely) that they had built a tool of the simplest kind that could be implemented independently of other tools which ARTC used. But they also indicated that ARTC usually did not use those tools anyway and, instead, did its timetabling “manually”. One of the stated aims of ARTC’s engagement of the consultants was to set up a measure of how well ARTC did its timetabling job. This was meant to become a new Key Performance Indicator (KPI), to add to other KPIs which ARTC has been required to report upon since 2005. There is no indication that this new KPI has been released to the stakeholders nor even whether this aim has been quietly shelved.

Some of the results from my study are shown in the charts on page 19 and the rear cover of this issue.

Middle chart, page 19

This shows the mean accumulated delays, (red line) plus the variability of these delays on weekdays, when freight traffic is heaviest. Also shown are the same statistics for weekend/holidays when freight traffic is light.

Bottom chart, page 19

Here I show the actual delay of every single run of NT32 (sometimes it was cancelled) in fine detail. As alluded to earlier,



on-time running is the exception; lateness is the rule. The stars represent the stations where crosses with other trains can be expected. With few exceptions, these loops often produce an increase in delay. The exception is Dungog, where the extended wait time for a train that isn't always there, giving ample opportunity for a "catch-up". I also produced (but do not have room to show) charts at a compressed scale, which show that, late in the day, the Broadmeadow—Central part of the trip can produce some shocking delays. It is true that the latter sections are busier—but they also have the advantage of at least double—and sometimes up to sextuple—track

Rear Cover (top)

The Google Earth chart is made from ARTC's Google Earth "kml" database of its km and half-km databases. Set beside this (almost) in scale is a chart of all the crossing loops with the clear length available shown as the horizontal bars. It can be seen that, while the line is reasonably well-provided with crossing loops, these are not evenly-spaced across the landscape. This is regarded as a hazard in Operational Research.

SCT and MB9

While my study was being carried out (22-Jan-2017), the rail operator SCT Logistics commenced a Melbourne-Brisbane service (in truth a Laverton-Bromelton service), with train numbers MB9/BM9. The MB9 trains have a potential to produce ripple delays on the North Coast as they meet other trains and NT32 itself. In theory, BM9 trains could also do this, but since they are running in the same direction as NT32, this seems less likely. It is interesting to compare NT32's lateness statistics through two different prisms:

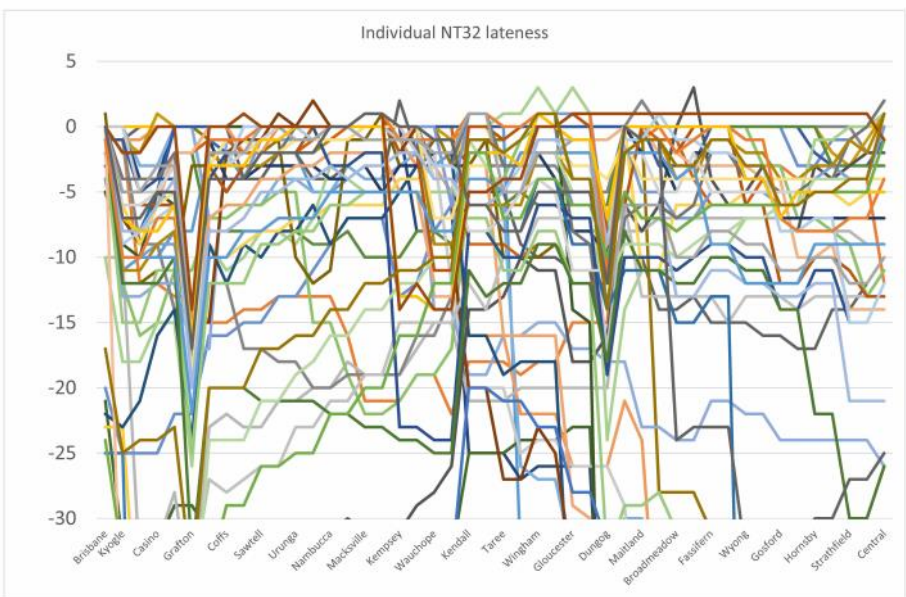
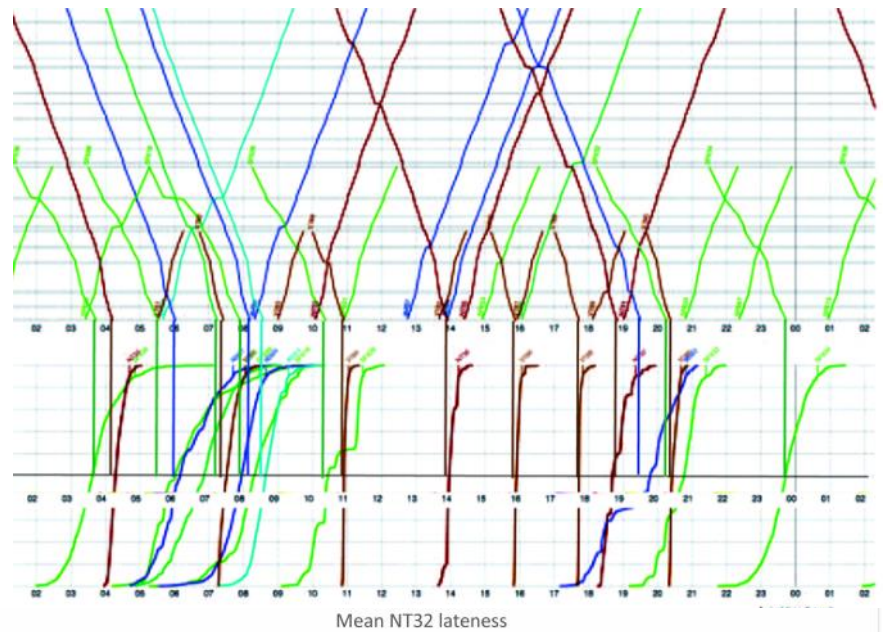
- Mean lateness before and after SCT commenced operating
- Day of the week lateness for "SCT days" versus MB9-free days.

Rear cover, bottom

The chart on the rear cover of this issue summarizes what I found between late December 2016 and mid-March 2017.

Here, we can test whether SCT's new trains made things get worse. Rather to my surprise, they did not. Across the board lateness statistics remained stable after SCT started its services. Even when we segregate the sheep from the goats (MB9 days vs non-MB9 days), there is no statistical difference.

Not long after I had finished my study, things went REALLY pear-shaped due to floods.





NSW north Coast Line and its crossing loops

