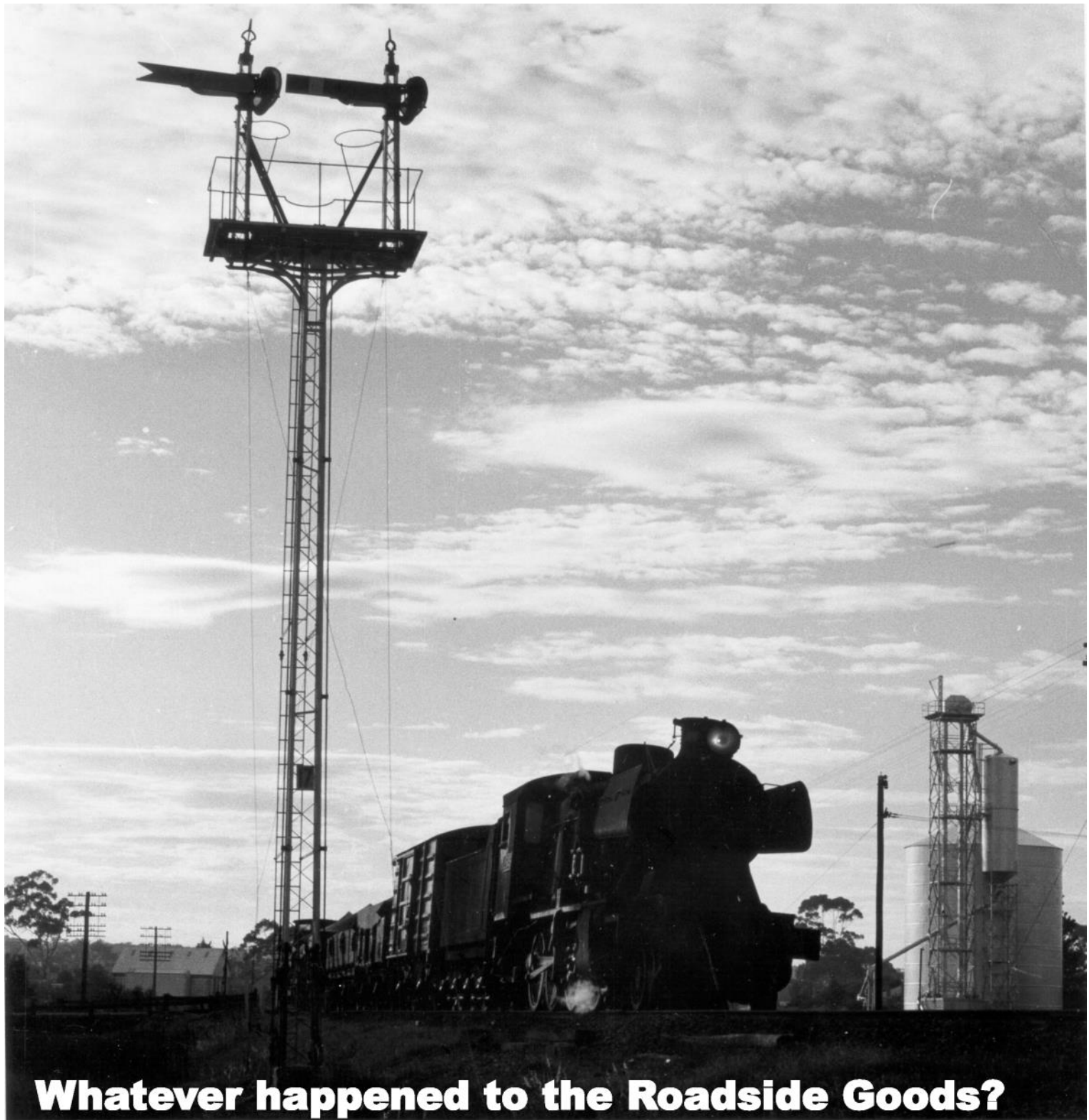




The Times

May 2023

A journal of transport timetable history and analysis



Whatever happened to the Roadside Goods?

**Inside: The Great Public Transport Race
Why Timetables Crash
Back to the Future with the Roadside Goods**

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When transport goes feral—a poster for the movie “Planes, Trains and Automobiles”

Re-running the Fairlight to Sydney Public Transport Race of 2007

By SMH cadet journalists and Geoff Lambert

I HAVEN'T BEEN ON TIME FOR WORK in months. Voter fury over northern beaches buses" By Angus Dalton, SMH [March 22, 2023](#)

Thus began a recent article in the Sydney Morning Herald. The story went on to describe a modal race from Manly to Wynyard Station.

This was not the first time such a thing had happened. For several years, about half my daily trips from Fairlight to Circular Quay, Kensington or even La Perouse were done on foot. I even made myself a small card timetable (below) to pace myself. The Fairlight to Circular Quay leg took 1 hour 56 minutes, The Quay to La Perouse almost exactly the same.

On my trip to the Quay, I kept records of the number of people in cars and in buses making the same trip. Rather surprisingly to me, 63% of the commuters were in buses. At the time, there was no such a thing as a Bus Lane on Military Road.

During 2007, I suddenly started noticing that a neighbour, Mike Baird (later to become Premier), was racing past me at a jog. He usually passed me at Spit Junction (49 minutes from home) at the same time as the Petrol



Sophia Masur says she hasn't made it to her city job on time for months as her buses are constantly cancelled. Credit: Kate Geraghty. [This was clearly a Wednesday morning ... you can tell by the Green Bins—Editor](#)

Station Manager was dipping her tanks (she worked to a strict timetable too!). Mike was able to demonstrate that jogging was faster than driving. Later in 2007, when he successfully ran for Parliament, he made the promise that, when in Government (2011), he would push for a Transit Lane for Military Road. He was indeed able to influence the new Transport Minister (Gladys Berejiklian) to make such a thing happen.

Let us now go to the Sydney Morning Herald story:

Voters on the northern beaches contending with cancelled buses, long queues and stranded schoolchildren are preparing to take their frustration to the polls as a crippled bus service helps the region branded the "insular peninsula" live up to its name.

Over the past six months, 11 per cent of planned buses bound for the city from the northern beaches never made it onto the road during the morning rush.

"It's outrageous. I haven't been on time to work in months," Sophia Masur, who works in the city, said on a day when five out of eight city express services from Manly were cancelled within an hour.

"Interest rates are going up, cost of living's going up, you just want to get to work so you can literally feed your family."

Masur, who said upset children trying to get to school are frequently among the stranded passengers, hasn't decided who she'll back at the state election on March 25 but Manly MP and Environment Minister James Griffin has lost her vote as a result of the chaos.

"I've been a Liberal voter, but I definitely won't be voting Liberal this time," said Masur. "It's really pissed me off."

A resident in Dee Why has taken to reporting bus cancellations daily in the suburb's community Facebook

Way-point	N'Bound	S'bound
PoW	0:00	2:53
Alison Rd	0:15 ¹⁴	2:38
RAS	0:30 ²⁹	2:23
Taylor Sq	0:47 ⁴²	2:06
GPO	1:04 ⁰⁵	1:49
S Bridge	1:13	1:40
Mid Bridge	1:20	1:33
North Bridge	1:26 ¹⁵	1:27
Ben Boyd	1:35 ²²	1:18
N Bay Jct	1:46 ³⁴	1:07
Crem Jct	1:54 ⁴⁰	0:59
Spit Jct	2:04 ⁴⁹	0:49
Awaba	2:09 ⁵³	0:44
Spit Bridge	2:25 ⁰⁷	0:28
Ethel	2:35 ¹⁷	0:18
Balgowlah	2:45 ²⁶	0:08
Home	2:53	2:00:00

21 mins ago	Manly 6:59 am Cancelled	Wynyard 7:35 am 170X
6 mins ago	Manly 7:14 am 7:09 running 5 mins late	Wynyard 7:43 am 170X
2 mins ago	Manly 7:18 am Cancelled	Wynyard 8:00 am 170X
6 mins	Manly 7:26 am Cancelled	Wynyard 8:08 am 170X
14 mins	Manly 7:34 am On time	Wynyard 8:18 am 170X
22 mins	Manly 7:42 am Real-time data unavailable	Wynyard 8:28 am 170X
30 mins	Manly 7:50 am Cancelled	Wynyard 8:36 am 170X

On Monday, five out of eight express buses scheduled to the city from Manly within one hour never materialized. Credit: Sophia Masur [screen shot of Sophia's Tripview app].

group alongside weather updates; last week she reported that 60 buses to the city and 29 buses bound to Manly from Dee Why were cancelled. The Rail, Tram, and Bus Union said the Brookvale bus depot was dropping between 160 and 200 trips a day.

Keolis Downer, the company that took

over the operation of buses on the northern beaches from the State Transit Authority in 2021, said a shortage of 82 drivers was behind the chronic cancellations and delays.

An urgent recruitment drive includes a \$2000 incentive for new drivers who join and stay with the company for 12 months, but Keolis Downer is competing for employees amid a 10 per cent national shortage of bus drivers.

Independent teal challenger to Griffin, Joeline Hackman wrote to outgoing Transport Minister David Elliott last month, and again on Tuesday, demanding the details of service contracts with Keolis Downer.

"You can't just sell off a public service and hope that the company is going to deliver for the public," Hackman said. "It needs to be with really strict oversight about those deliveries. Otherwise, you have this sort of hub-and-spoke system where it's not working for people that are not on a profitable route."

Elliott's office said the minister had written back to Hackman.

Griffin backed the government's view that private bus operators deliver better outcomes for passengers but said he shared commuters' frustration.

"There will be a focus on increasing

the number of drivers by securing proficient drivers from overseas, waiving training fees, offering bus drivers in Greater Sydney subsidised travel and giving local communities the opportunity to have input into bus services," Griffin said.

Manly candidates' transport policies Liberal MP James Griffin backs privatisation and has promised to recruit bus drivers from overseas and subsidise driver training fees. He intends to establish an Uber-style on-demand bus service in Manly.

Teal independent Joeline Hackman supports returning bus operation to the now-dissolved State Transit Authority and wants to improve bus driver working conditions and pay, and re-establish cancelled bus routes.

Greens candidate Terry le Roux opposes privatisation and wants to upgrade B-Line connections from Dee Why and Mona Vale to metro stations on the north shore.

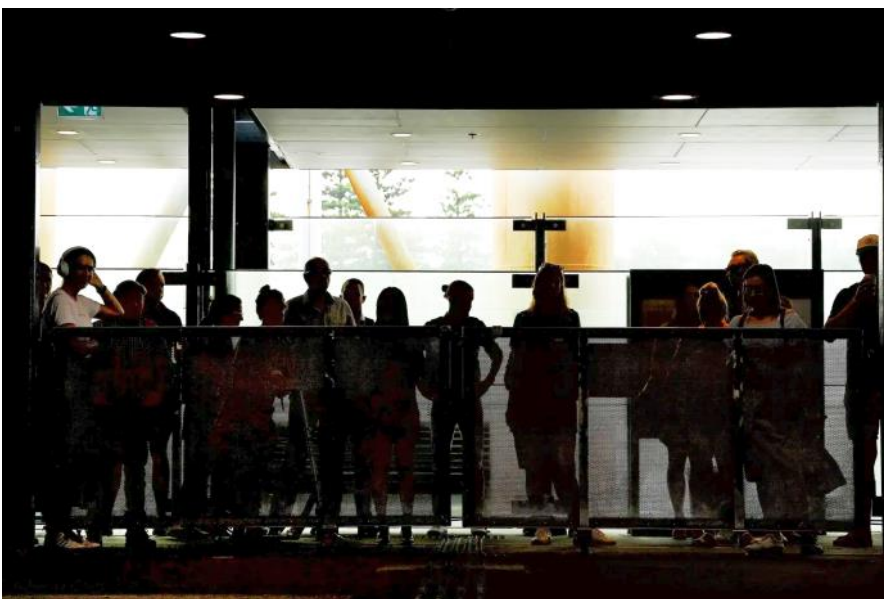
Labor candidate Jasper Thatcher wants to bring back the larger Freshwater class ferries and supports Labor's bus industry taskforce, which would assess the recommendations of the parliamentary inquiry into privatisation of bus services.

Balgowlah resident Stephen McNulty described getting a bus to the city as a "lottery" and said the failing public transport system forced commuters into driving.

"The government needs to look at the privatisation and make a decision as to whether it's giving citizens the service they need," McNulty said. "Public transport is a fundamental. Clogging up the roads with more people getting into a car because they can't trust the bus is a horrible answer to this problem."

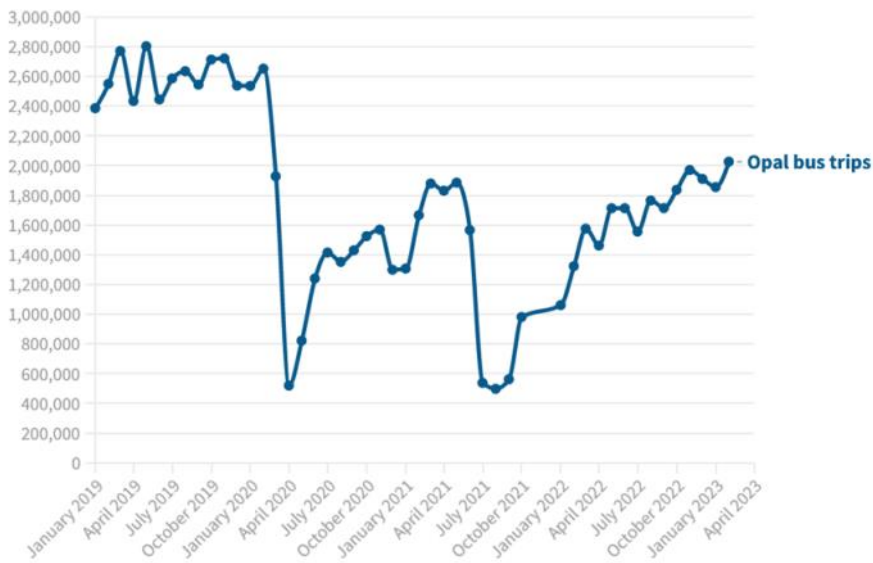
The Amazing Race: Manly edition

Reporters Millie Muroi, Angus Thomson and Angus Dalton decided to check out the public transport situation in Manly with an Amazing Race-style experiment. They went head-to-head in a time trial from Manly to Wynyard using three different transport options. Here are their findings.



Commuters wait for ferries at the Manly Wharf. Credit: Kate Geraghty

Monthly bus trips taken in region eight - which takes in the northern beaches and north shore - eclipsed two million for the first time since the start of the pandemic in February but bus services are struggling to keep up.



Source: Transport for NSW • Note: Data missing for November and December 2021.

last six months. Credit: Kate Geraghty

8.13am: I disembark at Manly Vale and instantly know I'm in trouble. Possibly more than a hundred bored commuters make up a line almost 100 metres long. As I draw closer I see teal shirts weaving in and out of the crowd – Hackman and her merry crew of volunteers are out on the hustings. "We're going to fix the buses!" the teal candidate for Manly announces. "This is what privatisation gets you." I join the line. Five minutes pass, then 10. The line is moving – not quickly, but it's not stagnant. Hackman approaches the man in a Taronga Zoo uniform standing behind me: "Thank you for your services, how long have you worked at the zoo?"

8.24am: Taronga man and I finally board the 177X to Wynyard. I lost 10 minutes at Manly Vale, but I'm back in with a shout here. Taronga man gets off at Spencer Street and wishes me good luck for the rest of the race. I fear the odds aren't in my favour.

8.55am: Arrive at Wynyard station bruised, but not beaten (I even managed to nab a seat as we crossed over the Harbour Bridge). Unfortunately, Millie has pipped me by a minute. Still, no sign of Angus on four wheels.

Ferry: Millie Muroi

7.50am: The best way to beat congestion is to fly over it. But conditions on the water aren't choppy enough to send the little Emerald-class ferries flying, and in the absence of Uber helicopters, my journey will be mostly seaborne. A brisk walk from Manly Corso lands me at the wharf where the Fast Ferry commuters whisk their way past me. A 16-minute wait later – precious time in the Amazing Race – I join the horde of passengers clambering onto the green and yellow ferry.

8.20am: The seats fill up rapidly, but snagging one on the side, I experience what I imagine is the same feeling a dog has when sticking its head out of a moving car, as the engines revved and the wind rushed past me. Scenic cliffs, seagulls and a clear blue sky takes the edge off our race for a while.

8.43am: A healthy dose of vitamin D later, the Opera House drifts into view and my feet touch the wharf at Circular Quay.

8.49am: A swift walk and four-minute train commute carries me triumphantly into Wynyard Station, with a final arrival time of 8.54am. No sign of the others: victory!

Bus: Angus Thomson

7:50am: I leave Manly Corso at a canter. I'm in this to win. A short walk

to Manly Tennis Club bus stop (across the road from the office of Teal candidate Joeline Hackman).

8:00am: I board the 142 bus [see Editors Note] to Allambie Heights. There's a dozen or so on board. Fortunately, none are fellow backseat bandits, and I claim the back row.

Manly residents waiting for the bus. At least 11 per cent of peak hour morning services have been cancelled in the



Peak hour traffic along Military Road in Mosman. Credit: Brook Mitchell

9:05am: Angus finally pulls up and rescues us from peak hour Pitt Street. The city is no place for a Corolla at this time of day.

Car: Angus Dalton

7:50am: I hop in my trusty Toyota Corolla. My route on Google Maps is dominated by red and orange strips, indicating slow traffic, but the first leg is pretty cruisy as I zip past commuters standing at bus stops. So long, suckers!

8:02am: I hit the red. It's a 13-minute swamp of congestion. What time does the Spit Bridge go up again?

8:23am: I'm crawling along Manly Road. Some buses sail past. I'm bracing for a smug glance from Thomson aimed at me from the bus lane. After inching across the Spit I hit another bout of 14-minute congestion. I wonder how many of my convoy companions are dreaming of a Beaches Link.

8:35am: Bless the Google AI gods; they've generated a back-streets

	Depart Manly	Arrive Wynyard	Elapsed time
Ferry	7:50	8:54	1:04
Bus	7:50	8:55	1:05
Car	7:50	9:05	1:15
Times Editor	7:50	9:30	1:40

shortcut that will allegedly shave 29 minutes off my trip. I gleefully zigzag through the streets until I realise I've been sold a lemon; there's a "No Left Turn" sign to get back onto Military Road. A hasty retreat.

8:50am: If I had a 9am job interview I'd be weeping. My speedometer has barely jumped above 20km/h. But I can see the city!

9:05am: I hate losing. But I pull over at Wynyard and my fate is sealed. If anything, our race has proven the efficiency and value of public transport, when it works. After covering 14 kilometres in an hour and 15 minutes, I can see why a number of northern beaches public transport devotees have lamented being forced

back to their cars.

Editor's Notes

(1) Given that the tenet of the SMH story was centered around the 170X bus, Angus Thomson's choice of the 142, thence a 177X, is mystifying in the extreme. Had he caught the 170X just across from Manly Wharf, he would probably have made the trip in 50 minutes instead of 65 minutes.

(2) Had Millie caught the Fast Ferry, instead of the F1 service, she would have won.

(3) I can't walk that fast now.

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

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Manly residents waiting for the bus near James St on Sydney Rd. At least 11 per cent of peak hour morning express services have been cancelled in the last six months. Credit: Kate Geraghty

Why do Timetables Crash?

GEOFF LAMBERT *considers the role of Chaos Theory in Public Timetable stability*

STRANGE ATTRACTORS—now THERE's a term. Does it relate to the “power” of timetables to attract timetable freaks such as you or I ... or does it relate to a visual representation of the way transit traffic behaves under duress? Well ... both, actually.

As you can see from the screen shots at right from the recent “event” in Sydney, “Chaos” is a frequently-used word to describe things caught up in a mess. We all could empathize with that.

The Oxford Dictionary says THIS of “Chaos”:

General complete disorder and confusion, e.g. “*snow caused chaos in the region*” [The Times Editor saw this happen [near DFW airport](#) and the surrounding freeways in 2008],

Similar: disorder, disarray, disorganization, confusion, mayhem, bedlam, pandemonium, madness, havoc, turmoil, tumult, commotion, disruption, upheaval, furor, frenzy, uproar, hue and cry, babel, hurly-burly, a maelstrom, a muddle, a mess, a shambles, a mare's nest, anarchy, entropy, lawlessness, [bangarang](#), hullabaloo, all hell broken loose, a madhouse, an omnishambles, a car crash, a three-ring circus.

Physics: the property of a complex system whose behaviour is so unpredictable as to appear random, owing to great sensitivity to small changes in initial conditions, the formless matter supposed to have existed before the creation of the universe.

Greek Mythology: the first created being, from which came the primeval deities Gaia, Tartarus, Erebus, and Nyx.

However, there is such a thing as “Chaos Theory” which is described by Wikipedia as:

“An interdisciplinary area of scientific

Videos



Sydney Trains CEO rules out cyber attack as cause of city's ...

YouTube · ABC News (Australia)
1 month ago



Chaos On Sydney Trains After Communication Issue Brings ...

YouTube · The Project
1 month ago



Trips cancelled amid more Sydney trains chaos | 9 News ...

YouTube · 9 News Australia
1 month ago



Transport for NSW shuts down the Sydney rail network | 7NEWS

YouTube · 7NEWS Australia
1 month ago

study and branch of mathematics focused on underlying patterns and deterministic laws of dynamical systems that are highly sensitive to initial conditions, and were once thought to have completely random states of disorder and irregularities. Chaos theory states that within the apparent randomness of chaotic complex systems, there are underlying patterns, interconnection, constant feedback loops, repetition, self-similarity, fractals, and self-organization. The butterfly effect, an underlying principle of chaos, describes how a small change in one state of a deterministic nonlinear system can result in large differences in a later state (meaning that there is sensitive dependence on initial conditions). A metaphor for this behavior is that a butterfly flapping its wings in Brazil can cause a tornado in Texas.

Small differences in initial conditions, such as those due to errors in measurements or due to rounding errors in numerical computation, can yield widely diverging outcomes for such dynamical systems, rendering long-term prediction of their behavior

impossible in general. This can happen even though these systems are deterministic, meaning that their future behavior follows a unique evolution and is fully determined by their initial conditions, with no random elements involved. In other words, the deterministic nature of these systems does not make them predictable. This behavior is known as deterministic chaos, or simply chaos. The theory was summarized by Edward Lorenz as: *Chaos: When the present determines the future, but the approximate present does not approximately determine the future.*

Chaotic behavior exists in many natural systems, including fluid flow, heartbeat irregularities [the Editor has that], weather, and climate. It also occurs spontaneously in some systems with artificial components, such as road traffic. This behavior can be studied through the analysis of a chaotic mathematical model, or through analytical techniques such as recurrence plots and Poincaré maps. Chaos theory has applications in a variety of disciplines, including meteorology, anthropology, sociology, environmental science,

computer science, engineering, economics, ecology, and pandemic crisis management. The theory formed the basis for such fields of study as complex dynamical systems, edge of chaos theory, and self-assembly processes.

Later, we will look at how a two-vehicle shuttle bus system in an amusement park parking lot can manifest “chaotic”, but predictable behaviour.

Mostly, when we talk about “Chaos” in a transport system, we are referring to chaotic behaviour of the elements within it – “Planes, Trains and Automobiles” –not to forget ferries.

Chaos can develop for a number of reasons:

The timetable was no good in its first principles.

- NSW PTC train timetable 1975 (see The Times [“Recipes for Disaster”](#), October 2002).
- [Great Britain 2018](#).

The timetable planners failed to take into account a vital element.

- Sydney Trains [April](#) and [November 2002](#) – TT required more staff than was available

A vital component of the system failed.

- Sydney Trains 2023 - failure of a microchip plug-in board.

There was insufficient or non-existent fallback/recovery mechanisms

- Sydney Trains 2023 - no hand-held train radios.

Mismanagement of staff.

- See story #1 in this issue.

The dimensions of chaos

With (a) trains (b) automobiles&ferries, and (c) planes, the potential for chaos—but also the ability to recover from it—has a “spatial dimensionality, as follows:

- (a) 1 (trains)

- (b) 2 (autos and ferries)

- (c) 3 (planes)

Trains are worst off in this ... once things go pear-shaped, they stay pear-shaped unless (as happened to Sydney Trains in 2023) the whole system is deliberately brought to a complete halt and started up again, once the problem has been analysed and fixed.

Put simply, cars, planes and ferries can dodge—trains cannot.

Some analyses of past failures

Recipes for Disaster 1975

The trains were too fast : Sydney to Liverpool in 29 minutes. In the 1990s, the XPT was scheduled to cover this distance in 36 minutes but, in the May 1975 timetable, a double-deck suburban set was timetabled to make the dash in one minute under the half hour—a timing never before or since bettered.

There was too little slack: A general precept of train timetabling is to allow time for recovery from adverse incidents. This usually takes the form of a “recovery time”. In the Sydney system where the same runs shuttle back and forth, this recovery time is theoretically built into the “turnaround” time at terminals. In the first place, the turnaround time needs to be long enough for all the tasks necessary to turn the train around: driver and guard swapping from one end to another, shunting from one track to another, etc.

In all, there were some 744 “turn-arounds” in the May 1975 timetable, not counting turn-arounds where the train also divided from or amalgamated with another. The average time allowed for this was 8¾ minutes, although times as short as 1 minute were called for; the most common times allowed were 6 or 11 minutes.

The train density was too high: One way in which the May 1975 timetable did not differ from its predecessor and successor was the number of trains run per hour during the Peak hours, when most of the trouble occurred.

It was in the off-peak hours that the May 1975 timetable displayed

increased train numbers over timetables that came before and after it. The PTC generally aimed for 20-minute train intervals as far out as Hornsby, Liverpool and East Hills and 40 minutes to places like Campbelltown, Riverstone and Cowan. The latter represented a 33% reduction in train intervals. But these densities come nowhere near the limiting densities for the lines concerned.

Train density, in terms of trains per hour certainly *can* be a determining factor in whether a timetable is workable. There is a standard set of rules which enable one to work out what the headway time or its equivalent number of trains per hour can be for a signalling system of a given type, handling trains of particular sizes and braking attributes. For Strathfield-Central, which had a line speed limit of 100 km/h in 1975, the theoretical minimum headway on the Main (express) lines works out to be about 80 seconds, or about 40 trains per hour. Nobody anywhere in the world runs this density of service. The volume handled in the NSW 1975 timetables is obviously well below the theoretical maxima, so that timetabled train densities do not even begin to approach those that might cause trouble.

Timetable too complex: The suburban rail timetables of NSW were known for their bewildering heterogeneity and the May 1975 timetable displayed this in extreme form. This chiefly manifested itself in the stopping patterns of trains on each line. According to Dornan and Henderson’s 1976 book on the Sydney system, “skip-stop” services had been introduced in the 16 April 1962 timetable and the travelling public had reacted badly to them. The instance of skip-stop services was greatly reduced in subsequent timetables, but substantial numbers persist to this day.

In the 1975 timetable, one had a choice of services that made 0, 3, 7, 10, 12, 13, 14, 16, 18, 19 or 23 stops between Central and Liverpool. Even for the trains that run to an identical travel pattern, they did not necessarily reach Liverpool in equal times.

Variability applied also to the variety of termini for trains on the one line. For the North Shore line, a fairly short and straightforward part of the network, no fewer than 8 stations acted as termini for northbound trains throughout the day: North Sydney, Waverton, Chatswood, Lindfield, Gordon, Hornsby, Mt Kuringai and Cowan.

In a timetable with such a diversity of stopping patterns, travel times also become very variable, the paths on a traffic graph are no longer parallel. It can be shown mathematically, and it is certainly true from experience, that this reduces line capacity.

Such diversity may or may not affect timetable performance, but it certainly seems to affect customer satisfaction, especially when coupled with a paucity of timetable information.

Great Britain 2018

The great timetable fiasco: what's gone wrong with England's railways?

After years of engineering upgrades, the stage was set for a vastly improved service: instead, two franchises are crippled.

For hundreds of thousands of commuters, a rail timetable change will never seem innocuous again. Before the schedules were switched three weeks ago, plenty of people had predicted teething troubles: train companies had spoken of the logistical challenge ahead, and commuters were told to expect some initial disruption.

At the time, Govia Thameslink Railway (GTR), seemed to have put recent problems behind it. There had been warning signs on Northern, which covers cities including Manchester, Liverpool and Newcastle.

One rail grandee had predicted problems. But Sir Michael Holden, a former boss of East Coast, said the chaos had surprised him. *"Never in my worst nightmares did I imagine it could conceivably be anything like as bad as it is,"* he said. Nigel Harris, editor of trade magazine Rail, said it was *"the most chaotic, fundamental and humiliating failure it has been my misfortune to witness in 40 years as a rail journalist"*.

What had been billed as a boost to services instead saw thousands cancelled: plummeting punctuality statistics for GTR and Northern masked even greater local problems. In some peak periods on the Manchester-Preston line, or on Thameslink mainline trains, two in three trains were failing to run at all.

Around 8,000 services on GTR have so far been cancelled or severely delayed, while some 5,000 Northern trains have suffered the same fate since 20 May – excluding two days of strikes when 2,000 trains were pulled in advance.

Why was the timetable changed so radically?

This blow to the reputation of England's railways came, ironically, at what should have been a moment of triumph. Instead of the usual twice-yearly tweaks, the national timetable was to undergo wholesale revisions to take advantage of new technology, new trains and years of engineering work. The Great North Rail project was designed to allow more trains to travel through Manchester, speed up journeys and make new direct links possible.

In the south, commuters were set to reap the fruits of a project so long in the gestation it was once called Thameslink 2000: a £7bn overhaul that included rebuilding London Bridge station, adding modern signalling and buying new trains so that dozens of services could pass per hour with automated, Tube-style frequency. Every single train timing was redrawn on GTR's franchise in an attempt to harvest the benefits of that work, add extra services and – laughable though it sounds now – increase reliability.

Why did it go wrong?

The fundamental problem was the lack of drivers. Both GTR and the company that operates Northern's franchise, Arriva Rail North, claim to be employing more than enough drivers to run the expanded services the May timetable was due to provide. However, what is needed on every train is a driver who has been trained both on the exact model of train and the full route they are to operate. That takes time and resources: new drivers are trained by qualified drivers, taking them out of the action too and

compounding the shortage.

That, of course, is foreseeable – which is why services have to be planned many months in advance. Normally, the process of setting timetables starts 16 months ahead, to be thrashed out by train companies and approved by Network Rail – the state-owned operator of Britain's rail infrastructure – with three to six months to spare. This time, it was a matter of weeks.

Why were the timetables drawn up so late?

There is no single answer, though there are interconnecting issues from north to south. For Northern, Network Rail accepts a large part of the blame for a long-delayed infrastructure upgrade – the electrification of the line past Bolton. Northern has also struggled with industrial relations: goodwill, which has often buoyed up an industry reliant on overtime and rest-day working, has evaporated in parts. All retraining has had to take place on working days, leading to an acute shortage of trained drivers even before the May changeover.

GTR, meanwhile, had been through well-documented problems of its own, with strikes by guards and drivers heaping on commuter despair. The Southern part of the franchise has been a byword for rail failure since 2015. A set of interrelated problems, on track and trains, had been identified by Chris Gibb, the senior railwayman brought in by transport secretary Chris Grayling to help restore some quality to GTR in December 2016. He warned that a phased introduction of new services would be vital to make Thameslink work.

That view was shared by Network Rail and GTR: but delaying new services needed the Department for Transport's approval – which came long after Network Rail planners needed to start drawing up the timetable. When the DfT belatedly decided phasing was a good idea, the planners' work was scrapped and the process started again, four months late already. And yet more issues arose: GTR's planning team, shorn of numerous experienced staff, requested thousands of changes months later.

Planes, Trains and Automobiles plot

Neal Page is an advertising executive on a business trip in New York City eager to return to his family in Chicago two days before Thanksgiving. After a late-running business meeting with an indecisive client, Neal struggles to hail a cab during rush hour. As he bribes a man to let him have a cab he has hailed, someone else takes it. He arrives at LaGuardia Airport just as his flight is delayed. While waiting, he meets the person who unwittingly stole his cab, Del Griffith, a loquacious man who sells shower curtain rings. To his chagrin, Neal is assigned a seat next to Del on the crowded flight to O'Hare. Due to a blizzard in Chicago, the plane is diverted to Wichita, where Neal and Del must stay overnight. Neal is unable to book a room, but Del has reserved one. Neal reluctantly accepts Del's promise of a room if Neal pays for their cab ride to the motel. The next day, with air travel still prohibitively delayed, Neal buys them both train tickets to Chicago, but with seats in separate cars. The locomotive breaks down near Jefferson City, stranding its passengers in a field. Neal and Del reunite. They travel on a crowded bus to St. Louis. At the St. Louis Airport, Neal attempts to rent a car, but it is missing when he gets to the lot. Neal attempts to book a taxi to Chicago, but impatiently insults the dispatcher who then punches him. By chance, Del arrives at the scene in his own rental car, and takes the dazed Neal with him. After nightfall, Del nearly gets them killed by driving in the wrong direction on a freeway. As they compose themselves by the side of the road, Del's carelessly discarded cigarette sets fire to the car. With his credit cards destroyed in the fire, Neal barter's his expensive watch for a motel room. The pair resume driving to Chicago the next morning, but their car is impounded by the Illinois State Patrol as unroadworthy. Del persuades a trucker to take them into Chicago and they ride in the semi's refrigerated trail-



Fair Dinkum Chaos

Chaotic behaviour can develop even in a Theme Park, where a 2-bus shuttle service takes customers to and from the carparks. I have travelled on one of them at Disneyland. Below is an extract from an academic article on exactly this topic:

Chaos Theory and Transportation Systems: An Instructive Example

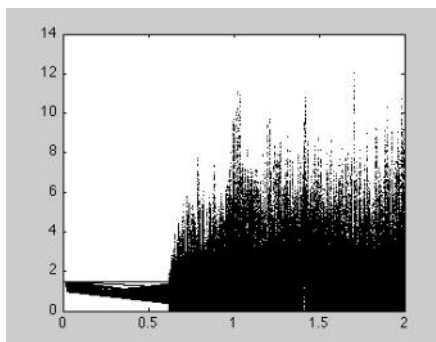
ABSTRACT: Chaos theory is used to analyze highly complex systems and thus may be useful for transportation applications. In this paper, a series of analyses which find and exploit chaos are outlined, including time delays and embedding dimensions, Fourier power series, the correlation dimension, the largest Lyapunov exponent, and predictions. As an example, traffic flow data is analyzed and found to be chaotic, though it is shown that this could be the result of high frequency noise. When used with a low-pass filter, predictions based on chaos theory are shown to have greater predictive power than a nonlinear least-squares method.

This paper used as its simple example, an earlier paper: “Chaos Control and Schedule of Shuttle Buses” by Takashi Nagatani which analyzed two Theme Park shuttle buses as they passed each other and picked up and dropped off passengers. The buses will make up for any time delay caused by dropping off passengers, by speeding up — indicated by a “speedup parameter”. There are four different cases of speedup parameter to be considered.

The authors included a number of diagrams for these simulations *Diagrams (1, lower left), (2, not illustrated), (3, not illustrated), and (4, lower right) relate to the distribution of time headway of bus 1 when there is*

- no speedup
- speedup with the same value
- speedup with different values with bus 1 speedup slightly greater than bus 2 speedup, and
- speedup with different values with bus 1 speedup much greater than bus 2 speedup, respectively

The authors say: *Comparing results, our simulation graphs demonstrate periodic behavior and reflect similar shapes as the Nagatani (2006) graphs. This supports the conclusion that speedup regulates chaos. As the loading parameter value (known in our equations as gamma) increases, periodic behavior is then implemented by changing the speedup value. Thus, by using a speedup parameter, this will lead to more orderly traffic by diminishing chaos.*



Another interesting component of our findings shows structure within the chaos.

The authors then show a series of zoomed in graphs from the simulation ... with evident parabolic structure seen in the smaller intervals.

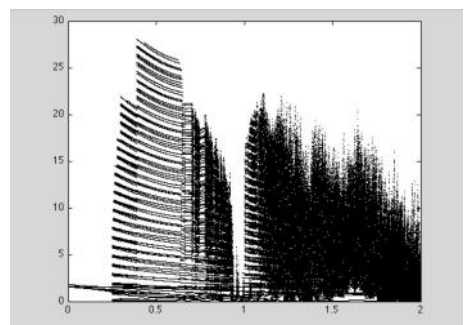
These results indicate that there is some predictability to the shuttle bus system and chaos can be controlled to make bus schedule times more efficient.

Conclusion : *Our results show similar periodic behavior in the same regions as the [original] report showed, even though the graphs themselves were very different. This periodicity means that there is some predictability to the shuttle bus system, and that the buses can be controlled by allowing them the ability to “speed-up” if they fall behind.*

Simple, isn't it?

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Whatever happened to the Roadside Goods train?

Geoff Lambert takes a look at an extinct type of train service.

In the USA they called them *Way freights*, in NSW *Pick Ups*. In Victoria, they were *Roadsides*—bucolic little trains that shambled from station to station, “picking up” and “setting out” at innumerable wayside halts which—like the trains—are now but memories.

When I was a budding chemistry student, I set up my own laboratory in the back yard and equipped it with paraphernalia that was shipped to me from Selby’s in Melbourne. Selby’s sent a truck with a packing case to the Melbourne Goods Yard. There it waited until a space could be found for it in the van of the Bacchus Marsh coal train. On arrival at Bacchus Marsh, someone manhandled it into the goods shed. Then the Assistant Station Master (ASM) phoned me to tell me it had arrived and, together, we manhandled it again out of the goods shed and into the boot of his car and he delivered it to my home. A scene like this seems unbelievable today—not least of all from the railway aspect—but when railways were young, all freight moved this way.

Here we look at the Roadside Goods VR’s Western line, following mostly the Down services from Melbourne to the border at Serviceton. I have chosen 1964 as my study date—when the Roadside Goods were still going strong, but the future was beginning to edge uneasily close. Express Goods were stealing the limelight, and road transport was stirring at last. In the face of this, an all-time record wheat harvest had to be dragged away by the Roadside Goods.

Melbourne–Bacchus Marsh

The line to Bacchus Marsh was conceived of as a local line, so local trains were long its mainstay even after the connection to Ballarat was opened. A regular Roadside Goods operated from 1890 until after the Second World War, from about 1950, this service moved to twice and sometimes three times daily. Although the Bacchus Marsh Roadside Goods were, from this time, mainly for brown coal moving to APM’s mill in Fairfield, they were still in principle the local Roadside Goods. In the 1960s, these trains carried one-third of a million tons of coal per annum, easily the largest on the line, third-largest in the state and 40% of the Sunshine–Serviceton line’s originating tonnage. By 1960, they rarely carried and set out goods at intermediate stations, but Bacchus Marsh was still the recipient of a handful of trucks per week.

In earlier years every station—even tiddlers like Staughton’s and Cockbill’s siding—had their share of train traffic. This was mainly agricultural produce, especially

Down MELBOURNE-ARARAT-Goods Service—continued.

STATIONS	195 Eng. & Van Tues. to Sat.	3 Thro. Goods Tues. to Sat. †	15 Goods Mon.	37 Pilot Tue.	39 Pilot Mon., Wed., Thur., Fri.	35 Goods Mon. to Fri.	11 Thro. Goods Tue., Wed., Fri. Sat. ‡
MELBOURNE YARD dep. ...	A.M.	A.M.	A.M.	A.M.	A.M.	A.M.	P.M.
DYNON ...	...	...	6 45	...	...	9 35	...
South Kensington ○ ...	...	...	...	...	...	...	...
Maribyrnong River Junct. ...	...	...	...	...	...	...	...
Footscray ...	...	...	...	...	...	...	...
Middle Footscray ○ ...	...	...	...	...	...	...	...
West Footscray ...	...	...	...	...	...	...	...
Tottenham ○ ...	...	...	...	...	...	...	...
Tottenham Goods Yard W ...	...	...	...	...	...	...	...
Sunshine ES ...	...	...	7 35	...	...	10 0	...
Ardeer Siding NC ...	...	...	...	...	...	...	...
Deer Park ○ ES ...	...	...	7 42—18	...	...	10 7	...
(See note page 12)	...	...	8 12—10	...	...	10 17	...
Rockbank ○ ES ...	...	...	8 31	...	...	10 34—8, 196	...
... dep. ...	...	...	8 55	...	...	11 10	...
Melton ES ...	...	...	...	...	...	11 21	...
... dep. ...	...	...	9 6	...	...	11 33	...
Parwan ○ ES ...	...	...	9 18	...	...	11 48	...
... dep. ...	9 10	...	wt 14	...	...	11 58	...
... arr. ...	9 16	...	9 24	...	...	P.M.	...
Bacchus Marsh ES W ...	...	...	...	...	...	12 4—160	...
... dep. ...	...	...	...	...	...	...	...
Bank Box Loop ...	11	...	...	...	...	...	...
Ballan ES W ...	Thro.	...	...	...	...	...	...
Gordon ○ ES ...	Goods	...	...	...	...	...	...
Millbrook ...	Mon. †	...	...	...	...	...	...
Wallace ...	A.M.	...	...	...	...	...	...
Bungaree ES ...	From	...	...	...	...	...	...
Dunstoun ...	Nth. G'long	...	7 Goods Mon. (Thur. †)	...	...	173 Thro. Goods Mon. to Sat. ‡	...
Warrenheip ES ...	...	...	...	...	...	...	12 8
... dep. ...	8 48	...	...	...	...	...	12 16
Ballarat East ○ ...	8 54	...	...	...	...	...	12 19
... arr. ...	8 57	...	...	...	...	...	...
BALLARAT W G ...	...	9 45	A.M.	...	...	P.M.	...
... dep. ...	...	9 45	9 45	10 55	11 55	12 5	...
Shell Oil Sdg. NC ...	...	9 48	9 48	10 58	11 58	12 8	...
Nth. Ballarat Junct. ...	...	...	...	...	...	...	...
White's Siding NC ...	...	...	...	...	...	...	...
Wendouree NC ...	...	...	...	...	...	...	...
Linton Junct. ES † ...	...	9 58	9 57	11 5	12 5	12 18	...
Windermere ○ ES ...	...	...	...	...	...	...	...
... dep. ...	...	10 11	...	...	...	12 31	...
(See note, page 12)	...	10 19	...	...	...	12 39	...
Burrumbeet ○ ES ...	...	10 37—38	...	...	...	12 53—176	...
... dep. ...	...	11 3—176	...	...	...	...	...
Travalla ○ ES ...	...	11 27—24	...	...	...	1 19	...
(See note, page 12)	...	...	...	...	...	...	...
Beaufort ES W ...	...	11 40	...	...	...	1 30—82	...
... dep. ...	...	...	...	...	...	...	...
Middle Creek ○ ES ...	...	12 9	...	...	...	...	...
(See note, page 12)	...	12 12—82	...	...	...	1 59—200	...
Buangor ○ ES ...	...	12 23	...	...	...	...	...
... dep. ...	...	1 5—25	...	...	...	...	...
ARARAT ES W ...	...	1 45	...	...	...	...	...
... arr. ...	...	...	...	...	...	...	...
... dep. ...	...	...	...	...	...	...	...
	11	3	7	37	39	173	11

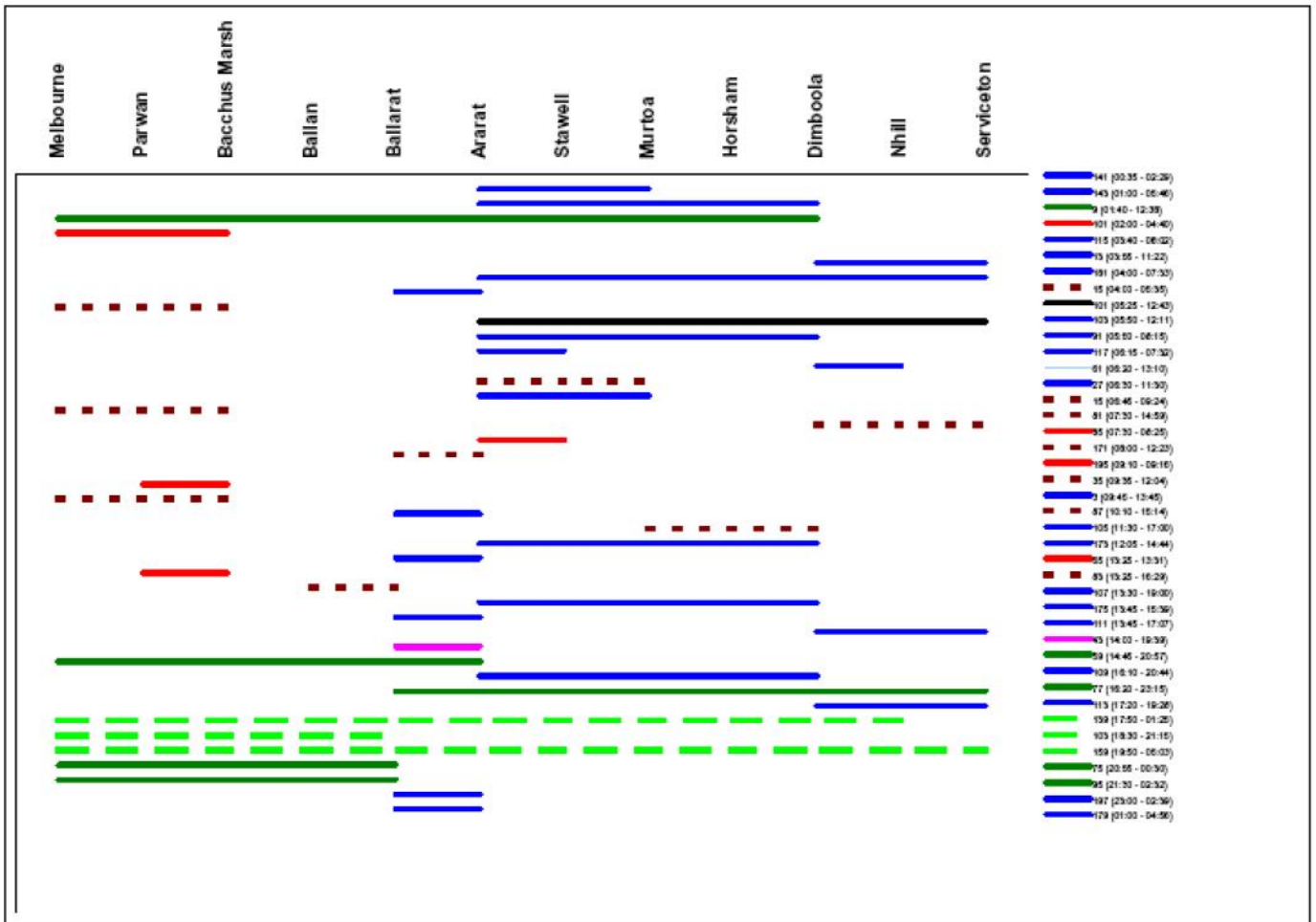
(W) 25

bagged barley, which was stored on site in stacks during the harvest season, before being whittled away by the daily Roadside throughout the following summer. Chaff and livestock was loaded at nearly every station too. Melton, for instance had two chaff sidings which wended their way out of the yard and into nearby chaff mills. There was a large stockyard at Bacchus Marsh, equipped with both sheep races and cattle races for loading trains. In the 1930s, the traffic statistics book records that the

principal outwards traffic from Bacchus Marsh was “chaff, firebricks, gas retorts, milk (concentrated and condensed), butter, poultry, hides and skins, wool, rabbits, fresh fruit, vegetables”. All of this is eminently predictable from the industries that existed in the town.

A composite track diagram of Bacchus Marsh yard appears on page 5, indicating where this traffic originated within the station. Note that Bacchus Marsh once had

Note that references to page numbers in this photographic reproduction refer to the page numbers in the original [pp 3-13].



The good old days. This graphic shows all regular Down goods trains on the VR's Western Line in 1964. The trains are arranged top to bottom by departure time and show the extent of the timetabled journey. The identification bar appears in the same order. The Roadside Goods are shown by the dark dashed lines (brown in our web version). Every section apart from Bacchus Marsh—Ballan has its Roadside Goods, usually taking half the day for a maximum of an 80 mile journey. It is noticeable that there is only one train per day that runs all the way through the Western Line— this is the famous “Jet”- then the fastest freight train in the world outside the USA.

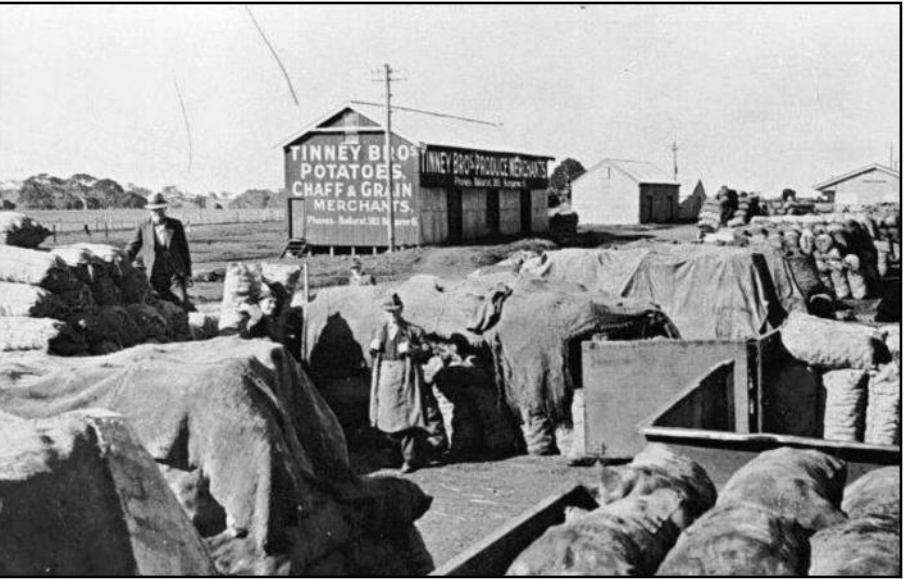
an engine shed for stabling the Ingliston Bank locomotive.

In 1964, three return Goods trains (15/8, 35/94 and 102) served Bacchus Marsh each day—or five if one counted the Bacchus Marsh-Parwan staging trips (195/194 and 65/72) as well. No. 102 was conditional and had no balancing down service—when run, the engine was usually taken off the down worker's and school train. These coal trains “doubled” on the hill up to Parwan on their return journey, reassembling there for the onward trip to Fairfield. Crews for these trains were frequently exchanged with those running the Down passenger train in the afternoon, on which I was a daily school traveller. On arrival at

Bacchus Marsh the train locomotive ran round its train and pushed the empties up into the coal siding, from whence they ran by gravity under the coal bins and back into the station yards. After dealing with

any local shunting, the train locomotive took one half of its train up the hill to Parwan. Then it returned with its van to Bacchus Marsh, picked up any outgoing traffic and the 2nd half of its coal load and stag-

The Cockies of Bungaree loading their potatoes for pickup by the Roadside Goods. Looking at this photo, one can almost smell the reek of potatoes, chaff, canvas and Hessian... can one not?



SECTION : SUNSHINE - SERVICETON LINE

Year	Outwards Passenger Journeys	Goods Tonnage		Number of Trucks of Live Stock				Number of Trucks of Live Stock				Principal Items of Outwards Goods Traffic
		Outwards	Inwards	Sheep	Cattle	Horses	Figs	Sheep	Cattle	Horses	Pigs	
1923/24		1563	134									
1924/25		2045	149									
1925/26		666	169									
1926/27		645	173									
1927/28		1032	871									
1928/29		179	107									
1929/30		521	106									
1930/31		1378	64									
1931/32	1	500	40									
1932/33	2	1025	42									
1933/34	32	760	70									
1934/35	55	655	77									



Calling at Staughton's Siding: Here are some traffic statistics for Staughton Siding, between Melton and Parwan, just around the cutting at the top right of Mark Bau's picture. All of this traffic would have come and gone on the daily roadside goods, though the term was not used during this period and no train was ever timetabled to stop here. Most of the outwards traffic from this station was probably bagged barley. The inwards traffic is less certain, but we can see that Staughton received 5 truck loads of livestock in this 10-year period. That may not sound like very much—it ISN'T very much—but it is a hell of a lot more than Staughton receives today. The station—and livestock traffic—have utterly vanished.

gered back up the hill to Parwan.

Bacchus Marsh-Ballan

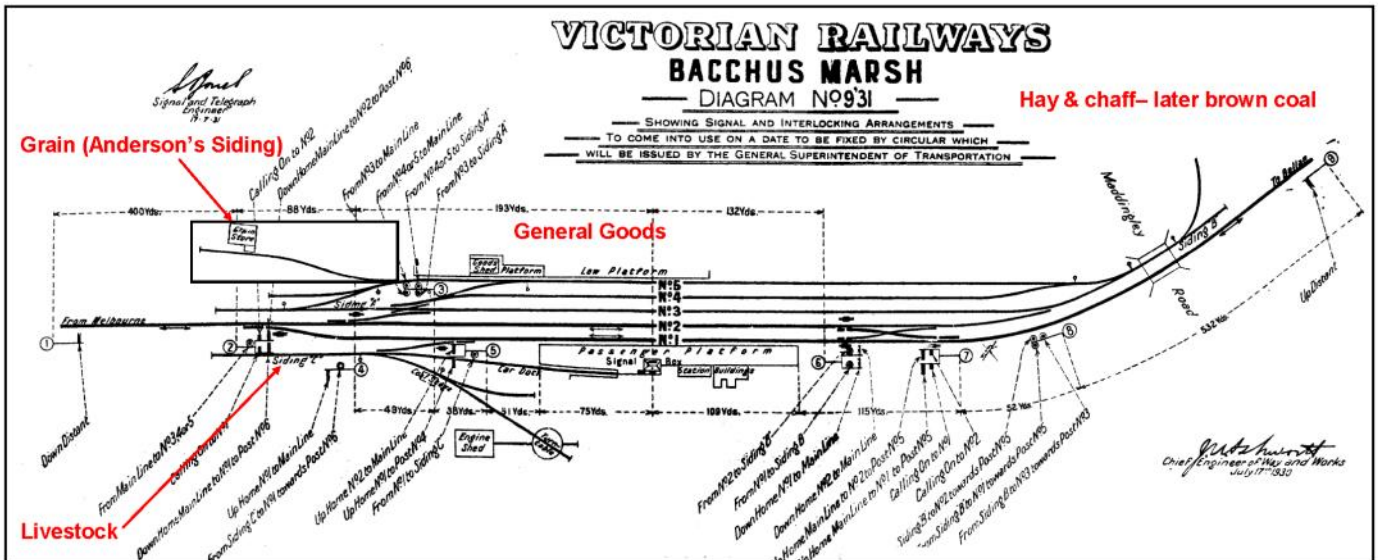
When the line between Bacchus Marsh and Ballan was opened in 1890, the goods train service remained wedded to those towns and no through Roadside Goods ran up or down the Ingliston Bank. To some extent, this must have been conditioned by the difficulties of working this section of track and the pre-existence of turntables at both Ballan and Bacchus Marsh. Around 1900, a shunt engine ran part way up the bank each day to the Dog Trap Gully Siding to load clay, but this did not last long. Even-

tually, a Melbourne-Ballarat goods service calling at all stations was instituted, taking all day for the journey. The engine off this train was often requisitioned to bank passenger trains up the hill. But eventually the local service was split again, there being little or no local traffic crossing the "border" between Bacchus Marsh and Ballan. In the early 1950s, a local goods train, exclusively for coal, ran between Bacchus Marsh and Ballarat for a while.

Ballan-Ballarat

It would be fair to say that this section of the line—at least whilst it was still a stub worked from Ballarat—was built for pota-

to traffic. This was one reason why the line meandered about so much: it tried to service the potato fields as closely as possible. In the 1880s, 6 train trips per day were required. Items as diverse as whisky, chaff, butter and timber were been carried in the 1930s. Like the Bacchus Marsh trains, the Roadside (No. 4/83) were run as a return trip from Ballarat in much the same way that they had been for nearly three-quarters of a century. In 1964, this was a weekly service only, running on a Thursday, but it was probably the most classic "Roadsides" of all those considered here. In both directions it was shown as dwelling at every station to handle traffic, in both directions.



Up. ARARAT-MELBOURNE—Goods Service—continued.							
STATIONS	82 Thro. Goods Sat. †	26 Thro. Goods Mon. to Sat. †	82 Roadside Goods Mon. to Fri.	90 Fast Goods Sun.	136 Fast Goods Mon. to Fri. †	200 Thro. Goods Mon. to Sat. †	
ARARAT ES W ... dep.	A.M. 10 55	...	A.M. 10 55	P.M. 12 50	P.M. 1 5—25	P.M. 1 5—25	
Buangor O ES ... dep.	11 28	...	11 38	1 19	1 34	1 45	
Middle Creek O ES ... arr.	...	...	P.M. 12 7-3	...	...	1 55	
(See note, page 12) dep.	11 36	...	12 38-25	1 25	1 40	2 4—173	
Beaufort ES W ... arr.	P.M. 12 3	...	1 16	...	...	...
Travalla O ES ... dep.	12 25-25	...	2 15	1 47	2 2	2 42	...
(See note, page 12) dep.	1 24	...	2 25	1 55	2 10	2 52	3 12
Burrumbeet O ES ... dep.	1 47	...	2 40-175	...	2 20	2 52	5 26
Windermere O ES ... dep.	2 16	...	3 9-43	2 12	2 27	3 17	5 55
(See note, page 12) dep.	2 25	...	3 46-49	2 18	2 33	3 25	6 3
Linton Junction ES †	2 40	...	4 43-77	2 31	2 46	3 46	6 24
Wendouree ...	...	...	5 8	...	...	...	43, 49, 34, 77
White's Siding NC ...	...	...	...	...	...	...	...
North Ballarat Junction ...	2 47	...	5 15	2 38	2 52	3 53	6 31
Shell Oil Siding NC ...	...	...	...	...	...	...	...
BALLARAT WG ... arr.	2 50	...	5 18	2 41	2 56	3 56	6 34
Ballarat East O ... dep.	...	3 30A	...	2 43	3 30	...	...
Warrenheip ES ... dep.	...	3 56-77	...	2 46	3 33	...	...
Dunnstown ...	...	4 12B	...	3 2	3 49	...	...
Bungaree ES ...	...	...	...	3 32-77	...	...	...
Wallace ...	...	...	...	...	4 2-83	...	...
Milbrook ...	...	...	...	...	...	...	...
Gordon O ES ...	...	...	...	4 3	4 18	...	...
Ballan O ES W ...	...	...	...	...	4 31-59	...	...
Bank Box Loop ... dep.	...	...	...	4 15	5 3	...	...
Bacchus Marsh ES W ... dep.	...	...	...	...	5 37	...	...
Parvan O ES ... dep.	...	...	...	...	5 53	...	...
Melton ES ...	...	...	...	4 53	7 48	...	...
Rockbank O ES ... dep.	...	...	...	5 4	8 0	...	...
Deer Park O ES ... dep.	...	...	...	5 12	8 7	...	...
(See note, page 12) dep.	...	...	...	5 55	8 21-159	...	...
Ardeer Siding NC ...	...	...	...	...	8 36-73	...	...
Sunshine ES ...	...	...	...	6 16	8 44	...	...
Tottenham Goods Yd. W ... arr.	...	...	...	...	8 55	...	...
Tottenham O ... dep.	...	...	...	...	9 25	...	...
West Footscray ...	...	...	...	...	...	...	...
Middle Footscray O ...	...	...	...	...	...	...	...
Footscray ...	...	...	...	6 26	...	...	...
Maribyrnong River Junction ...	...	...	...	...	...	...	...
South Kensington O ...	...	...	...	6 30	...	...	...
DYNON ...	...	...	...	...	...	...	...
Weighbridge Jetn. ... arr.	...	...	...	...	9 45	...	...
MELBOURNE YARD ... dep.	...	...	...	7 0	10 5	...	...
	...	...	...	...	10 20	...	...
	82	26	82	90	136	200	200

A. No. 26, when 136 runs to depart Ballarat 3.45 p.m., Ballarat East 3.50 p.m., Warrenheip arrive 4.11 p.m. thence as tabled. B. Depart Warrenheip 4.6 p.m. Saturday.

50 (W)

scends to Stawell, where there is almost always traffic offering. No 61 is pictured on our cover heading west out of Stawell just after sun-up, after having paused to pick up some of this traffic. The line remains scenically interesting for some further distance, as it skirts the foothills of the Grampians. There is traffic at all the little stations, but even when there is little reason to stop to shunt, there always seems to be a train coming the other way which has to be met. At Glenorchy, No 9 Fast Goods (News), which is by now also effectively a "Roadsides", overtakes No. 61.

Finally, just after 1 p.m., No 61 pants to a stop at Murtoa—7 hours, but only 54 miles from its starting point. Approaching Murtoa, it has passed the enormous grain silo at Marmalake, capable of holding some 15 million bushels of wheat. This facility, later to be dubbed a "sub-terminal", dates from the early days of the Second World War, when large facilities for the long-term storage of wheat were needed because of the inability to export it during the war. After the war, it continued in that role and became a major target of grain trains from all over Western Victoria. The 1964 WTT contains 3 pages of timetables devoted solely to wheat trains destined for Marmalake. As many as seven wheat trains per day trundled in off the Patchewollock line, all of them steam hauled and all of them effectively "Roadsides" in nature. The 1964 summer was, as many will remember, one of the greatest wheat harvests in history, when the VR had to recall nearly one hundred steam locomotives from storage to handle the extraordinary traffic.

Along the line here the Roadsides stopped to load: wool, mining timber, pollard, ice, stone, coke, tanks, honey, kaolin, bran, "empties" (of what?) and all the usual stuff—but overwhelmingly wheat.

Murtoa-Dimboola

Five days per week (2 mandatory, 3 conditional) Roadside Goods No. 87 made the 38 mile run between Murtoa and Dimboola. Its Up counterpart was No 86 Through Goods, which transformed to a Roadside Goods at Horsham and back to a Through Goods at Murtoa, from where it continued as a Through Goods all the way to Ararat.

In addition to wheat, wheat, wheat and wheat, the trains also collected tomatoes, second hand machinery, butter, wool, poultry and honey.

Dimboola-Serviceton

It is 8:30 on a hot Monday morning at Kiata and the heat haze is already shimmering across the flat Western plains. From high up on the silo, smudges of dust or smoke can be seen in all directions. Most are being raised by farmers harvest-

dawn departure for a shuffling, half-day, 54 mile trip was an aspect of railway operations that is nowhere to be seen nowadays. On the days that I chased it, it was rare indeed for some traffic not to be loaded or unloaded at every station.

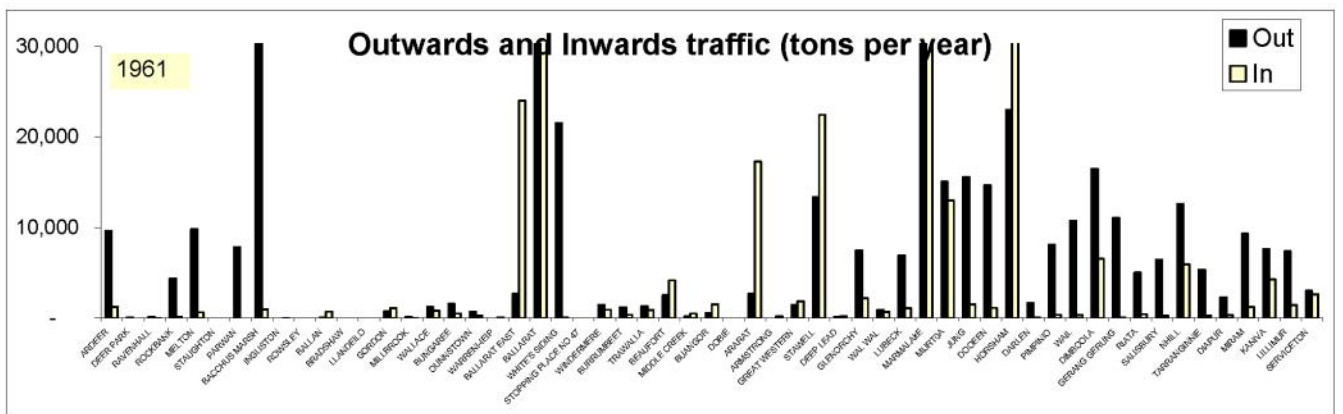
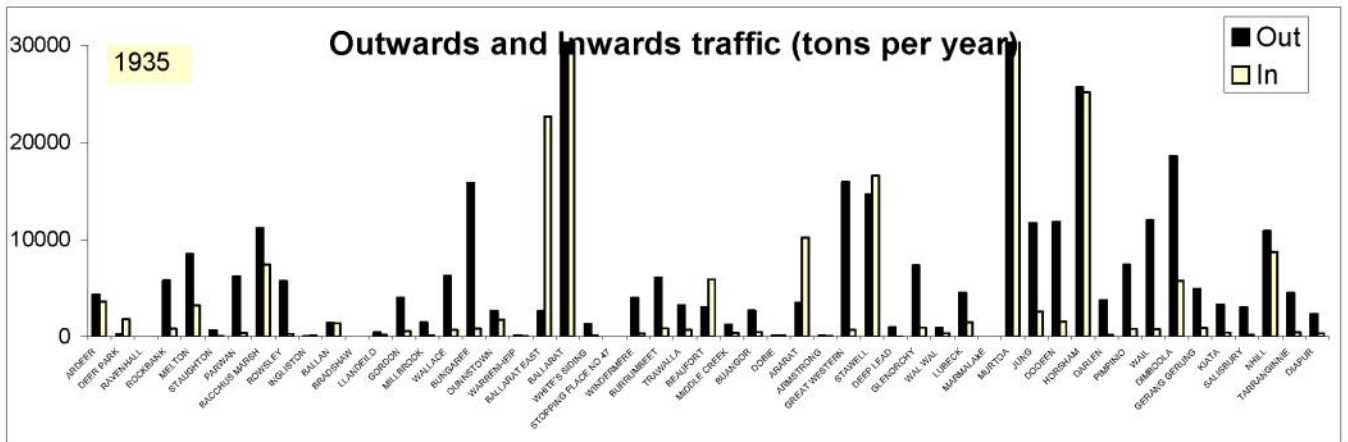
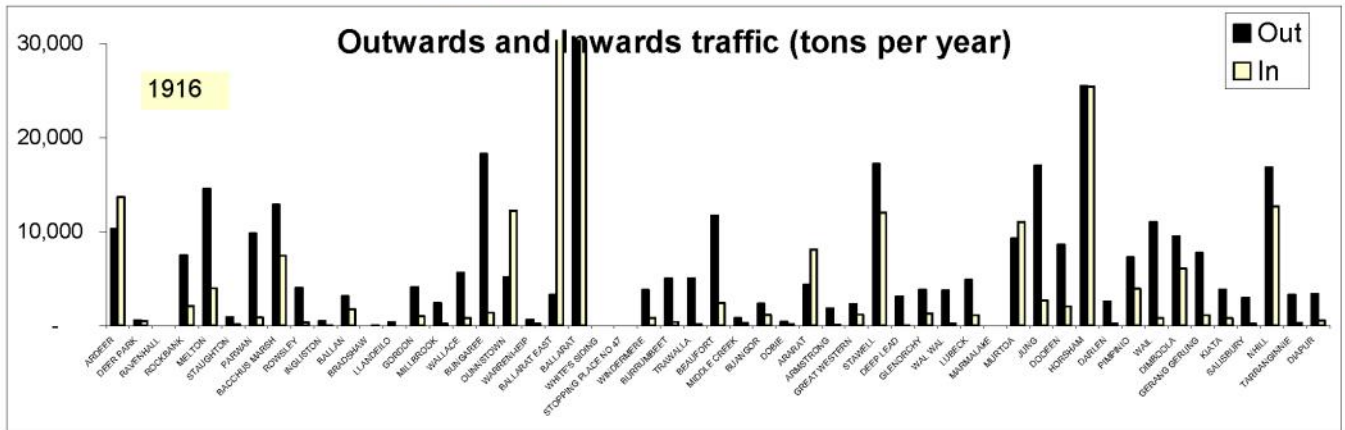
In the pre-dawn frosty darkness, the train examiner's boots crunch along the Ararat yard, as he makes his way down the train of largely 4-wheeled stock, checking the brakes. Three shunting engines stand empty in the yards, exhaling quietly, awaiting new crews to replace those who have gone home to breakfast. In the hours since midnight at least 9 Down goods trains have

headed up the hill, so the yard by now is quite empty.

From down the hill at the locomotive depot, a short hoot heralds the arrival of J549, which trundles by on the main line and then backs onto its train. At 6 a.m., 20 minutes early, the train jerks away from the yard and sets about the climb towards Armstrong which is closed as a staff station at this time of day. The first regular call is at Seppelts Siding, half a mile short of Great Western, and it does not take much imagination to guess what sort of traffic is to be lifted here.

From Great Western the Roadsides de-

Station	No.	Passenger	Goods	Sidings	Engine Shed?	TT (ft)	Goods Platforms	Goods Sheds	Grain Storage?	Cranes (tons)	Weigh-bridge	Carriage Dock	Livestock rces	
													Sheep	Cattle
ARDEER SIDING	800		(a)	LB	L = loop									
DEER PARK	801	P	G	LB	B = Branch		2	1	X					
RAVENHALL	802		(a)	B	D = Dead-end									
ROCKBANK	803	P	G	L			1		B					SR
COCKBILL'S SIDING	802		TL	L	TL = truckloads									
MELTON	804	P	G	LB(2)	(a) platform goods		2	1	B	2t	P10		SR	CR
STAUGHTON	805	RMSP	(a)	L	H = No siding		2	1	B					
PARWAN	806	P	G	LD			1	1	B		P10		SR	CR
BACCHUS MARSH	807	P	G	LD		X	70	2	3	B	P10,50	CD	SR	CR
ROWSLEY	808	P	G	L					B					
INGLINGTON	810	P	G	L			1	1					SR	SR
BALLAN	811	P	G	LD			70	2	1		P10t		SR	CR
BRADSHAW	812	P	H	-										
LLANDEILO	813	RMSP	(a)	L										
GORDON	814	P	G	LD			2	1		10t				
MILLBROOK	815	P	G	L						8t			SR	CR
WALLACE	816	P	G	L						10t,6t			SR	CR
BUNGAREE	817	P	G	LDB			1	3		15t			SR	
DUNNSTOWN	818	P	G	LB										
WARRENHEIP	885	P	G	L			1	1						



ing their wheat, but two are being raised by the engines of approaching Roadside Goods trains No 50 and 137 which will

cross in the station yard below. They are each collecting what the farmers are out on their tractors harvesting—wheat—or drop-

ping off trucks to collect more wheat tomorrow. Another cloud of dust swirls around the foot of the silo as farmers queue

	1916	1935	1961
ARDEER	23,974	7,928	10,842
DEER PARK	1,005	2,019	93
RAVENHALL	-	-	164
ROCKBANK	9,544	6,577	4,507
MELTON	18,515	11,694	10,481
STAUGHTON	1,000	726	-
PARWAN	10,628	6,575	7,846
BACCHUS MARSH	20,277	18,624	313,382
INGLISTON	4,301	5,974	35
ROWSLEY	487	146	-
BALLAN	4,852	2,822	800
BRADSHAW	35	3	-
LLANDEILO	345	595	-
GORDON	5,067	4,586	1,871
MILLBROOK	2,564	1,583	185
WALLACE	6,391	6,959	2,067
BUNGAREE	19,630	16,634	2,075
DUNNSTOWN	17,362	4,404	966
WARRENHEIP	839	178	98
BALLARAT EAST	35,903	25,299	26,732
BALLARAT	133,329	127,634	253,836
WHITE'S SIDING	-	1,388	21,557
WINDERMERE	4,561	4,300	2,385
BURRUMBEET	5,364	6,933	1,551
TRAWALLA	5,184	3,897	2,209
BEAUFORT	14,046	8,937	6,710
MIDDLE CREEK	1,025	1,578	685
BUANGOR	3,432	3,136	2,072
DOBIE	515	241	-
ARARAT	12,431	13,678	19,985
ARMSTRONG	1,895	171	196
GREAT WESTERN	3,415	16,587	3,288
STAWELL	29,203	31,242	35,806
DEEP LEAD	3,092	971	370
GLENORCHY	5,050	8,243	9,662
WAL WAL	3,936	1,253	1,625
LUBECK	5,922	5,975	8,037
MARMALAKE	-	-	295,019
MURTOA	20,310	64,437	28,048
JUNG	19,652	14,273	17,110
DOOEEN	10,625	13,334	15,810
HORSHAM	50,919	50,853	68,206
DAHLEN	2,798	3,892	1,760
PIMPINIO	11,143	8,190	8,481
WAIL	11,782	12,742	11,059
DIMBOOLA	15,525	24,347	23,047
GERANG GERUNG	8,815	5,786	11,140
KIATA	4,582	3,697	5,443
SALISBURY	3,177	3,217	6,724
NHILL	29,497	19,604	18,518
TARRANGINNIE	3,562	4,926	5,598
DIAPUR	3,868	2,665	2,671
MIRAM	7,374	8,259	10,535
KANIVA	8,469	11,344	11,879
LILLIMUR	7,212	9,465	8,816
SERVICETON	2,378	8,667	5,651
	636,807	629,188	1,307,633

up in their trucks to dump their harvest into the silo and into the busy trains. This is 1964, when farmers and trains were "run off their feet" to bring in a harvest of unequalled size. It is too the era of the 4-wheel wheat wagon, thousands upon thousands of which were needed to carry away a crop like this. Every inch of siding space is full with them, a never to be repeated scene.

The section between Dimboola and Serviceton was, at some 63 miles, the longest

over which a Roadside was required to operate on the Western line and, not surprisingly each spent some 6 hours or more on the task, notwithstanding the easy nature of the line.

The big picture

In summary, a lunchtime snapshot or train graph would have shown 10 Roadside Goods trains on the move (or more likely stationary) on the Victorian Railways western line in 1964. This is 10 trains more

than one could find today. Where did they go?

The chart on page 4—a kind of bastardised train graph—has been compiled from the VR Western and South Western Working Time Table of 2nd November 1964, the relevant tables from which are scattered through our pages. I have tried to show all trains (except the plethora of local trains in and around Ballarat) so that their termini, the times at which they run and the type of work they did can be seen. The Roadside Goods trains are shown with dark dashed lines.

It is fairly apparent that most trains were short distance, the VR classifying them, in order of length of journey, speed and importance as:

Roadside Goods (brown dashed)

Goods (blue)

Light engines (red)

Through Goods (blue)

Fast Goods (dark green)

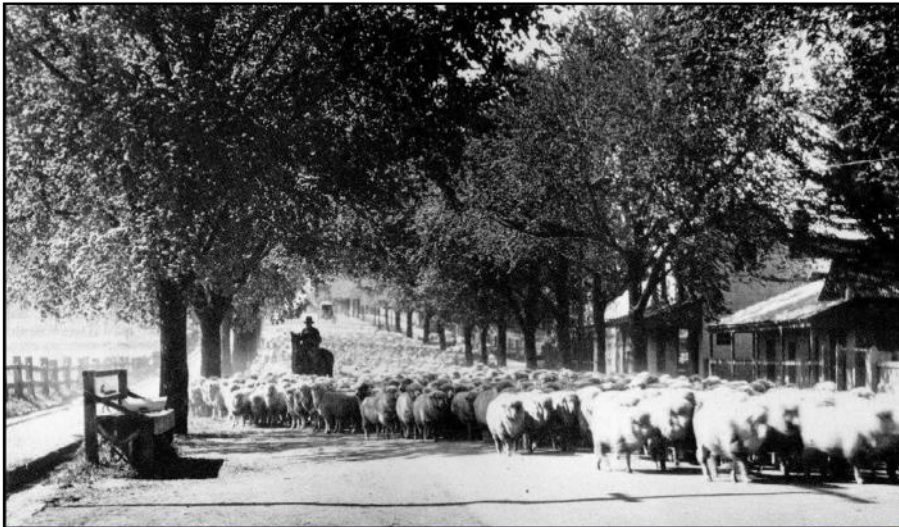
Express Goods (green dashed).

The chart at the foot of page 6 shows how the average distance a ton of freight was carried in Victoria rose from under 100 miles to well over 200 miles in the second half of the twentieth century. In 1950, a goodly proportion of the freight which moved, moved in trains like those which I have just described. By 1990, those trains had vanished. The length of freight haul represents the total domination of freight moving in the Albury-Melbourne-Serviceton corridor—only crumbs are left for the intrastate lines and nothing at all for the many branches of 1950, nor their daily Roadside Goods.

On our page 13 is a Load Table from the 1964 WTT, showing that Roadside Goods were specially catered for—this was because they stopped everywhere and could not make use of "momentum grades" to get them over short grades near stations.

Only the Roadside Goods generally served the smaller stations— which is to say they served everything except Ballarat, Ararat, Murtoa, Horsham and Dimboola. Through, Fast and Express Goods called only at these latter stations to gather up what the roadsides had assembled for them. Each echelon of goods services thus acted as a kind of "sweeper" for the next-higher echelon and this required the construction of marshalling yards at roughly 50-mile intervals to gather everything up. And not only marshalling yards, but locomotive depots, administrative centres, homes for staff and even entire towns— the Roadsides had widespread flow-on effects. With the disappearance of the Roadside goods, a great deal of this infrastructure has evaporated.

It is doubtful in the extreme that significant traffic ever moved from one small station to the next on the Roadsides— or any train



Headed for the Roadside Goods. In 1934, nearly 9,000 truckloads of sheep travelled on the Sunshine-Serviceton line, usually by the Roadside, though sometimes in sheep specials. Here we see a flock heading down Church St in Bacchus Marsh to catch the Roadside. Every aspect of this once common scene has vanished along with the Roadside Goods itself.

can see that “intermediate to intermediate” traffic was vanishingly small. In 1893, for instance, on the Strahan-Zeehan line, which moved 153,000 tons of freight in that year, a mere 0.55 tons moved between the small stations.

The table on page 8, which has been compiled from the VR’s supplementary WTT volumes ‘*Directory of Stations*’, shows the facilities for goods traffic on the Melbourne-Ballarat section. One can see that all types of traffic were provided for—general goods, livestock, grain, parcels. This was no mere convenience, it was a legal necessity because the VR was a “Common Carrier”, required by law to accept almost any freight capable of being handled. The charts on page 8 and the table on page 9 show just how large—or, by modern standards, how small—this traffic could be. The charts are truncated at 30,000 tons per year.

Note how incoming traffic to the intermediate stations (smaller than the outgoing in the first place) shrinks much faster than the outgoing traffic, particularly at the eastern (Melbourne) end. Particularly notable at this end is the Bacchus Marsh outgoing traffic. Were the chart not truncated, this traffic would be seen to be the highest on the line. It was 99% brown coal. Further west, the siding at Marmalake shows a similar jump but here the incoming and outgoing traffic are equal, a consequence of Marmalake being a “staging post” for export grain. Traffic from stations east of Ararat have almost fallen completely away by 1961, but west of there wheat traffic has, if anything, grown. The high level of incoming traffic to Ballarat East, at around 30,000 tons per year is at first surprising, but this was locomotive coal. All stations

with loco. depots show similar preponderance of incoming over outgoing.

The table on page 9 reveals that, for most of the small stations, the total traffic handled, inward and outward, could be handled by a single train of today—indeed in many cases, a single train of the period.

Before the First World War, when “transport” meant “rail transport”, the question of rail retaining the lion’s share of this transport task was simply unaskable. After the war, when returning soldiers in particular saw an opportunity in using road motors for transport it began to creep into the consciousness. By the 1920s, it was sufficiently alarming that most State Governments moved to protect the traffic of the railways which they owned by enacting draconian road regulation. You can see why—State-owned railways, despite the fiddly nature of their traffic, were money-spinners for their owners. In the years before the First World War, railways made a profit over and above their capital cost—so much so that railway profit funded the entire Education and Health systems of several States. This was something worth protecting. It kept the road lobby at bay for 30 years and gave an extended lease of life to the Roadside Goods.

The natural advantages and attractiveness of road over rail transport did not manifest themselves or did not begin to be exploited until well after the Second World War. Trucks were small and slow, roads were poor and road transport was held back by Government regulation. So long as there appeared to be no disadvantage in the triple handling required to get rural goods to market, nor for rural communities to receive their supplies the same way, the

Roadsides was safe.

A landmark High Court case in 1954 put an end to all that and, it can be fairly said, the case sealed the fate of the Roadside Goods. In the 1970s, common carrier requirements were abolished and road transport was further deregulated. This had a dramatic impact resulting in the loss to road of much non-bulk freight, other than some containerised commodities. Rail’s response was the creation of Regional Freight Centres that drastically reduced the number of stations handling general freight from around 450 to 46 and eliminated the need for regularly scheduled Roadside Goods train operations on most branch and secondary lines. In this period, the requirement to carry LCL traffic was also removed and by the mid 1980s rail had abandoned the carrying of livestock traffic.

Block container trains were introduced, serving regional intermodal terminals. There was a major reduction in the shunting task and closure of numerous shunting yards. All other commodity movements were consolidated into full train loads or were handled using blocks of wagons attached to scheduled services.

Re-structuring of grain operations including new locomotives and wagons, block train operations, introduction of Central Receival Points with rapid unloading and outloading facilities and construction of the North Geelong Grain Loop then ate into short-haul grain traffic. Introduction of bunker storage (thus effectively eliminating traditional massive peak harvest movements) enabled train operations to be pre-planned based around export shipping programmes and domestic grain consumption. The average size and weight of grain trains more than doubled during this period.

NOW you can see what happened to the Roadside Goods—there was nothing left for it to do.

A cynic would say there never was.

Further reading and sources of information

Those interested in reading more of what goods train services were really like in Australia 50 years ago could do no better than read Ron Preston’s “The Day of the Goods Train”. A good exposition of how Way Freights are run in the USA in 2007 can be found in the July 2007 issue of Trains magazine. An excellent summary of the Victorian situation is an presentation by John Hearsch to the RTSA in Wagga Wagga earlier this year. The traffic statistics came from VR Annual Reports and from a “Central Western District” typescript statistics book won at an AATTC Auction.

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