

## MISSION STATEMENT

As a youngster I eagerly soaked up anything I could read on the topic of railways. There was very little about Australian railways. In 1959 I commenced my secondary schooling at Adelaide Boys High School.

Within the school library there was one book on Australian railways. It was Eric Harding's 1958 *Uniform Railway Gauge*. I read it from cover to cover and I think I read it again. About 10 years later I was able to purchase my own copy from a second-hand book shop. I still have it and refer to it often.

Eric Harding had enjoyed a long career as a senior civil servant. He had received the honours of MM (Military Medal) and OBE (Order of the British Empire). He had retired when he wrote the book. His last posting was as Civilian Permanent Head and member of the Military Board. His book examined the origins of the break-of-gauge in Australia, and the attempts by governments to fix the problem. The text was supported by a number of cartoons by Pat Oliphant, which provided a degree of levity to a serious situation. He has dedicated the book to the memory of Norris G. Bell, the first Commissioner of the Commonwealth Railways.

There has been a lot written on specific aspects of the gauge problem in Australia since then but, until now, there has been no revisiting of the theme of Harding's book. There are some points in Harding's book where there has been new information and opinion, which is to be expected after 60+ years.

One of my early mentors was the late Ron Stewien, who was a Civil Engineer with the South Australian Railways (SAR). He once commented that the SAR were world leaders in gauge conversion and had developed considerable expertise in consequence of a succession of gauge conversion projects throughout the 20th century. It really wasn't something to crow about for it was an admission that South Australia was probably the worst place in the world when it came to break-of-gauge havoc.

This book is a social history. It chronicles the forces that drove the dilemma, the politicians, and the 'experts' who led us up the wrong track. It created towns and cities that would not have otherwise happened.

That, in turn, has caused our society to develop in ways that would not otherwise have happened. For example, governments have used railway gauges to their advantage in setting trade barriers. Harding has provided us with a history of 60 years or more of attempts to fix the gauge problem in Australia. The theme of his book was essentially optimistic.

Eric Harding believed we were on the cusp of getting on top of gauge problem. It hasn't happened and we are probably further away from resolving the situation than we were in 1958.

I was so taken by the Oliphant cartoons in Harding's book that I have continued the theme with some produced specifically for this book by Greg Judd. This book has been several years in the making and I have, more than once, put it in the slow lane while I gave priority to other projects.

I acknowledge contribution from Des Smith, retired civil engineer and former Chief Engineer of Australian National. His input has enriched chapters 1 and 2 to the extent that they provide a level of understanding of these topics far beyond what has been offered to the serious student of railways in the past. I also acknowledge contribution from Bob Sampson regarding the Fitch era of the South Australian Railways.

For myself it was a subject of which I thought I knew a lot, but I have estimated that about 90% of the content has been new knowledge to me. It has consumed my existence almost full time during 2023. I have enjoyed writing it and sincerely hope that it is a source of enjoyment and enlightenment for the reader.

I close on a serious note. All attempts at fixing the problem have been met with attacks of apoplexy by politicians, rail administrators and economists as the cost would be staggering. But I suggest that the accumulated cost to the nation, of not fixing it has been even greater. It continues to accumulate. I can't quantify that amount and I suspect those same politicians, rail administrators and economists are similarly powerless. And thus, may they sleep peacefully.

John Wilson 1 December 2023

## PHOTOGRAPHS

The *North Star*, early locomotive on 7 ft gauge Great Western Railway.

Francis Wentworth Shields cartoon by Greg Judd.

Welcome aboard *The Ghan*\*.

*The Westland*, narrow gauge Perth to Kalgoorlie\*.

The railway gauges of Europe\*.

Bluebird railcar at Salisbury\*.

Model 75 narrow-gauge railcar at Peterborough by Geof Grant.

Commonwealth Railways locomotive depot at Port Pirie\*

Mr Gladstone at Gladstone by Greg Judd.

A narrow-gauge Beyer Garratt at Nantabibbie by Geoff Grant from the Phil Curnow collection

Port Pirie yard 1957 by Geoff Grant.

\*My own entries JLW.



## MEASURING THE NOISE

I have used TROVE as a proxy for the degree of havoc being caused by the break-of-gauge. I have entered “break of gauge” in the search facility and produced the charts which appear on the next two pages.

There is the occasional reference in the 1840s and 1850s which were mentions of the problem overseas or the occasional visionary sounding the warning bells for Australia. When Sydney, Melbourne and Adelaide went their respective ways in 1853–1856 it attracted little attention. There were many who believed that the distances were so great that the conflicting gauges would never meet. Or did they cultivate that concept to absolve themselves of the need to address the problem?

The first real evidence of any ‘noise’ was in 1867. These references were from South Australian newspapers reporting the enthusiasm then being shown for the 3 ft 6 in narrow gauge. Come 1870 when the first South Australian narrow-gauge line was opened there was no noise because there had not been a break-of-gauge. There was no inconvenience. Indeed, the wheat farmers around Hoyleton were much better off as they could get their crops to the port.

There was plenty for the newspapers in 1871 with a flurry of reports and letters to the editor in Victoria. That colony attempted to introduce the 3 ft 6 in narrow gauge for a railway to Sale. It didn’t happen. But that would not be the end of the matter in Victoria.

In 1876 there was a break-of-gauge, of sorts, at Evandale Junction in Tasmania, but it didn’t raise too many problems. It was a similar situation in 1878 at Kadina in South Australia.

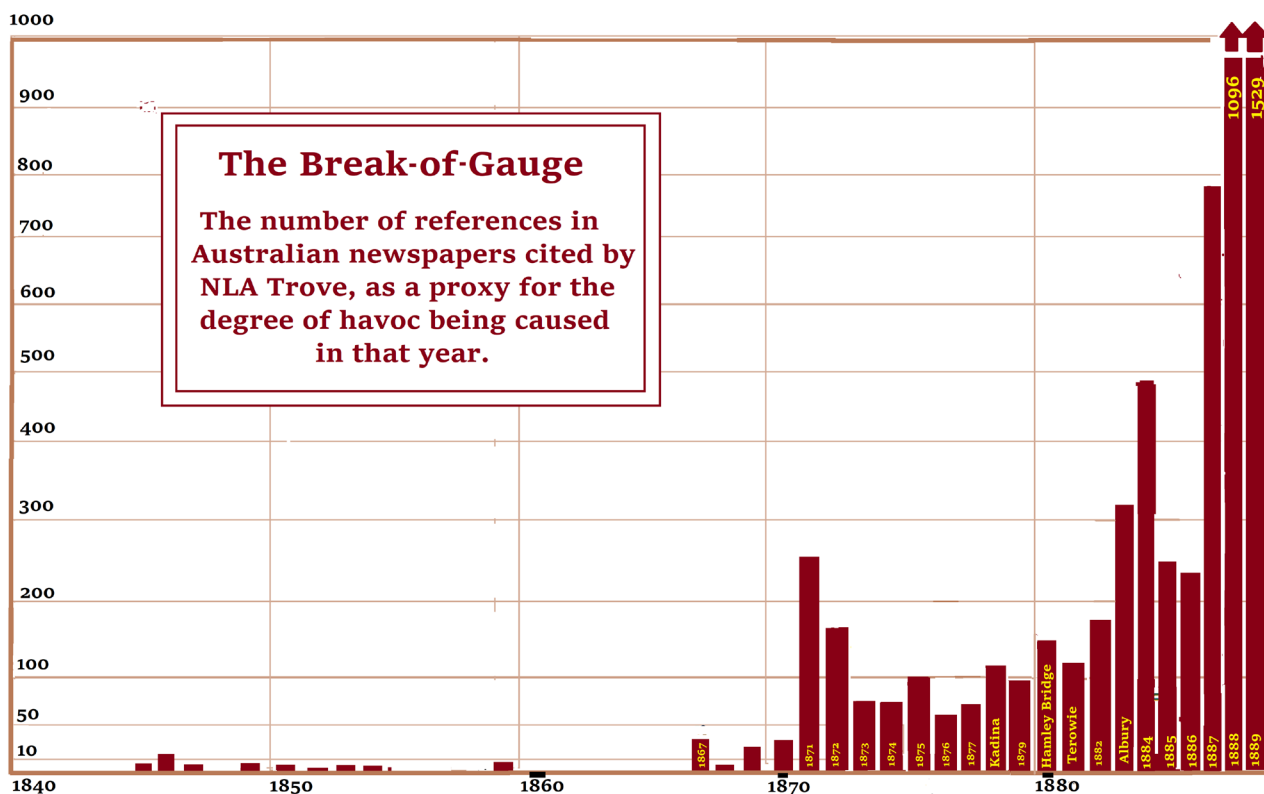
But in 1880 and 1881, in rapid succession, the reality of the break-of-gauge hit home in South Australia at Hamley Bridge and Terowie.

Then, in 1883, Australia’s most famous break-of-gauge at Albury. But it didn’t generate a great deal of noise because people change trains themselves and there was no significant amount of merchandise that had to be transferred from one gauge to another. Merchandise between the colonial capitals generally went by sea. The real havoc of the break-of-gauge would be revealed when large amounts of merchandise had to go inland.

In 1889 there was another significant break-of-gauge at Wallangarra where the passengers travelling between Sydney and Brisbane had to change trains.

A quick look at the chart will show that the year 1889 generated more noise about break-of-gauge than any other year that has been charted. But most of those 1889 newspaper items were coming out of South Australia.

The problem was Broken Hill, or more to the point, the merchandise flowing from Adelaide to Broken Hill, and the ore and concentrates being railed south. Hamley Bridge and Terowie became major problems. The Broken Hill traffic was so rapid that South Australia hardly knew what hit them. There was much talk about a third rail into Adelaide and there were many inventions of wagons that could be converted from one gauge to the other.



By about 1891 it seemed that South Australia had learned to live with the problem.

One could be forgiven for thinking that the problem had gone away by 1895. There was no point in colonial interests crying about the break-of-gauge because they were all focused on Federation, which was seen as the solution to the problem.

There was a bit of a flurry in 1897 when Victoria had a new generation in Parliament that had not inherited any wisdom from those who had deliberated the situation back in 1871. They finally went narrow gauge with their plan to build lines to the 2 ft 6 in gauge.

When Federation came in 1901 there were other priorities, but as early as 1903 the Commonwealth had agreed that the Stephenson standard gauge would be the national gauge.

1908 was a time when there was serious discussion about the railway joining Western Australia. That would keep the newspapers with plenty to write about for the next few years. In 1915 the break-of-gauge had become such a problem that there were again plans for gauge convertible wagons and multi-gauge yards which made Tocumwal (Riverina) quite a spot on the map.

From 1920 there was plenty of activity on the a break-of-gauge with the Garvan Royal Commission presenting its evidence in 1921. There was plenty to keep the topic alive during the 1920s particularly in South Australia where there was conversion of some narrow-gauge lines to broad-gauge lines which only shifted the problem from Hamley Bridge to Gladstone.

In 1930 the standard-gauge line was extended to South Brisbane.

Predictably the break-of-gauge, and any solutions were off the agenda during the worst years of the depression.

1935 was a year of considerable activity with South Australia and the Commonwealth finally agreeing on the direct line between Port Augusta and Adelaide.

I have not continued the chart beyond 1939. It should be noted that Sir Harold Clapp tabled his report on rail standardisation in March 1945 but this did not result in the conversion of one inch of track. The reason that I have not continued beyond 1939 was that newspaper reporting was using the break-of-gauge terminology less and less. The word was rail standardisation (although Clapp spelt it with a 'z').

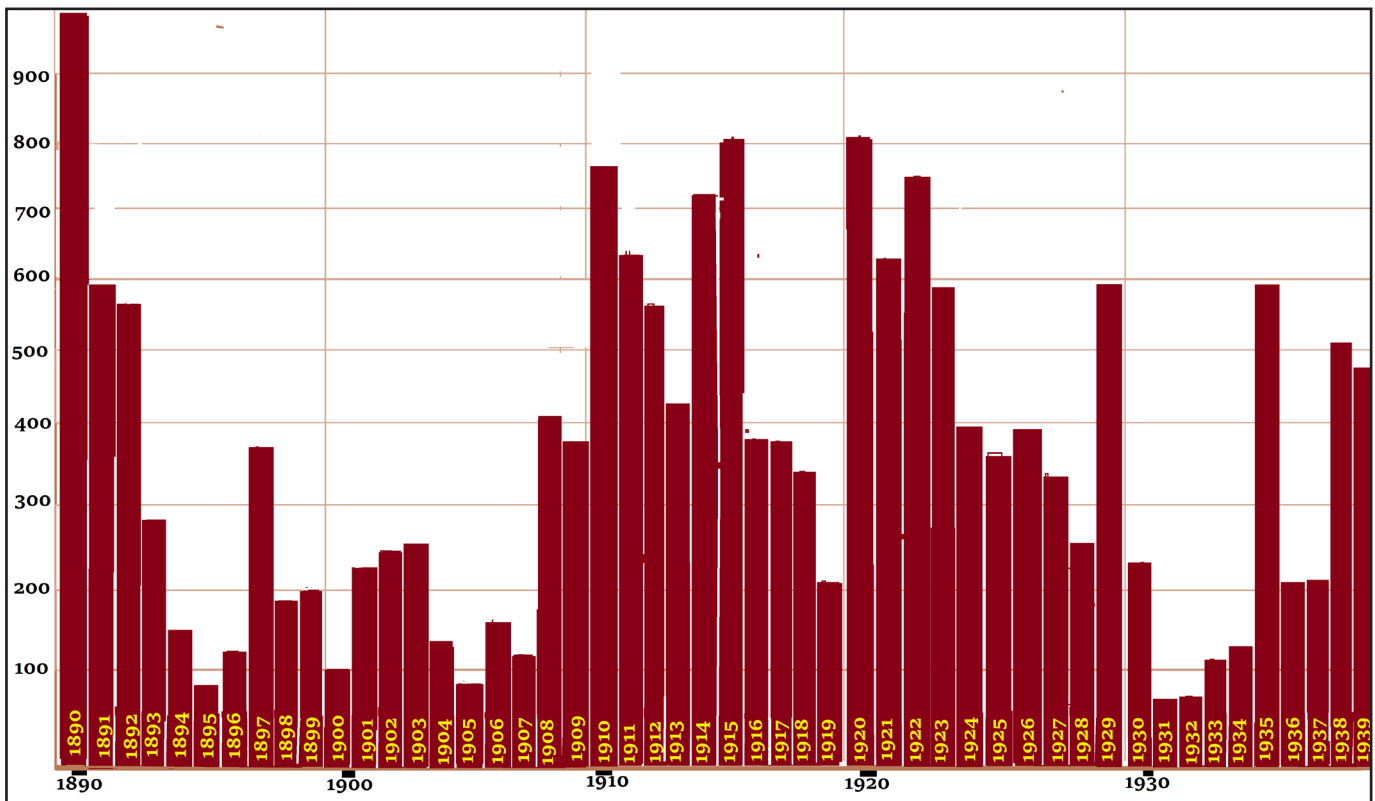
## HYPHENS

My use, or non-use, of hyphens in relation to railway gauges may appear inconsistent and irritating to some. It has been well considered. I shall explain.

Consider the following statement. *The railway was built to the narrow gauge.* Here the gauge is the noun (although somewhat abstract) and may be visualised as a bar with two lugs. The 'narrow' is the adjective, hence no hyphen.

Now, consider the last sentence in the previous column. It is the 'lines' that is the noun, hence the 'narrow-gauge' with the hyphen. Here, the 'broad-gauge' refers to those lines, hence the hyphen.

Regarding the 'break-of-gauge' further explanation is on the next page.



# ET CETERA

## THE ODE TO THE HYPHEN

*Some folk spell the 'break-of-gauge', with hyphens to boot,  
But others hate hyphenaters, whom they'd willingly shoot.  
And narrow and broad-gauge are likewise affected  
So I'm telling you now, how my wrath is directed.  
Those who hate hyphens or ones who give them no rest.  
May I give you a lesson of English 'writ' at its best.*

*A 'break of gauge', a measuring tool with a lug  
Snapped in two as a result of a generous tug,  
But when these two nouns get those hyphens betwixt  
Compounds to an adjective when the parts are all mixed.  
But we can't have an adjective with no noun to refer,  
A 'break-of-gauge' on its own must, to something, infer.*

*By way of example, I could draw up a list  
A mess, muddle or bungle, and others I've missed  
'Tis the curse of the otherwise great rail invention.  
So I'm telling you now, its my determined intention  
For the pages that follow, will have hyphens galore.  
I have made my decision. Lest I sound like a bore.*

*I've applied the same rule with the narrow and broad-gauge  
And to them who don't like it – you can vent your rage.  
Does it matter what power the hyphen does hold  
As long as history, its facts are quite honestly told.*

## WHEN IS A BREAK-OF-GAUGE?

Albury, Wallangara and Port Pirie were break-of-gauge stations. But let us consider the situation at Broken Hill in the 1960s where travellers had to lump their baggage two town blocks from one station to another. Was that a break-of-gauge? Then there were towns of which Whyalla and Port Lincoln are examples. There were distinct railway routes that terminated at opposite ends of the town and even if there were passengers willing to lump their baggage across town, they would have found that one or both railways were for the transport of a particular commodity; in both of these cases, mineral products.

Then there were stations where there were two gauges in consequence of a gauge conversion project, and this was a temporary arrangement. Examples would be Bowmans, Brachina and Naracoorte.

There has been a proliferation, in recent time, of heritage and tourism railways that have been developed with conflicting gauges. Examples are Port Augusta, Belgrave, and Mount Barker Junction.

## NOMENCLATURE AND UNITS OF RAILWAY GAUGES IN AUSTRALIA

There are three railway gauges in Australia that are the core of this story. Along the way we will meet many other gauges.

**Narrow gauge.** 3 ft 6 in. 1067 mm. In recent times it has been called 'Anglo-Cape'\*.

**Standard gauge.** 4 ft 8½ in. 1435 mm  
Also called 'Stephenson standard gauge'.

**Broad gauge.** 5 ft 3 in. 1600mm. Also known as the 'Irish broad gauge.'

In the 19th century in England there was the broad gauge of the Great Western Railway that was 7 ft 0¼ in (2140 mm).

We should also be aware that in 19th century in England the 4 ft 8½ in gauge was routinely known as 'narrow gauge'. In Australia there is also confusion arising from the use of 'narrow' to describe railways of 2 ft or 2 ft 6 in. The latter is also known as the Suez-Walhalla\* although its application in Suez was 760 mm. The lines in Victoria are 762 mm.

There are obsolete Australian railway gauges such as 4 ft 1½ and 4 ft 6 in for which it would be inappropriate to specify a metric equivalent.

I have described the various railway gauges in terms that are appropriate to the times. We know, for example, that the *Rocket* was built for the 4 ft 8½ in gauge but George Stephenson did not have a metric ruler. But when they used that same gauge for the line to Darwin it was 1435 mm.

World-wide there are some anomalies where there have been different metric equivalents. Russia and its allies used 5 ft, but it now works to 1520 mm. Finland previously used the 5 ft gauge but now works to 1524 mm.

There are issues with the 5 ft gauge and 5 ft 6 in gauge where different countries have varied the gauge by a few mm. Spain and Portugal once had a common gauge of 5 ft 6 in and exported it to their colonies. With metric conversion that is now 1672 mm in Spain and 1668 mm in Portugal. India and the BART System of San Francisco are the widest gauge in general usage at 1676 mm.

I have applied similar logic in the case of distances. Henry Mais built the railway over the Adelaide Hills with 10 chain curves. He did not build curves of 201.12 metres. It is a similar situation with miles and kms.

\*As distinct from the break-of-gauge there is also the 'gauge disconnect', such as presently exists at Wolseley and Mount Barker Junction. This is where there has been an historical junction but the branchline has become disconnected.

\*\* The Anglo-Cape and Suez-Walhalla terminology seem to have originated in recent time and have attracted little use outside of Australia. There is the suspicion that these terms have been popularised by the late Hon. Tim Fischer.