# 2024 06 16 Australia’s Railways – part 1

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**Description: Australia’s Railways**

***Australia’s Railway System Needs Modernisation***

**Coverage and Infrastructure**

Australia’s Railway infrastructure was built between CE 1850 and about CE 1920 and this very quickly became the prime highly efficient land transport infrastructure, that wiped out the earlier technologies of Stage Coaches and Bullock Drays.

Originally, Australia was going to be the Irish 5’ 3” (1600 mm) gauge, as this was far more stable than the more common UK 4’ 8.5” (1435 mm) gauge, but because of the lack of large trees for sleepers and very long rail lines, QLD and WA and SA opted for 3’ 6” (1067 mm) gauge.

NSW started with 5’ 3” gauge, but with a change in Rail Managers (from the UK), the new line from near Central to Parramatta was narrowed to 1435 mm – primarily to conform to the UK Act of Parliament “outlawing” gauges other than Stephenson’s 4’ 8.5” rail gauge. Victoria wisely stayed at 5’ 3” rail gauge.

Almost all of this rail infrastructure was built using manual labour – and this why the rail lines wind around the hills / valleys instead of going straight through (as road highways after CE 1960 do. Through several decades this continual manual labour and mining and farming and grazing built generations of powerful / muscular / strong Australians.

By Federation in CE 1901, there was a very comprehensive rail network throughout most of Eastern Australia and in SA, and WA – and this was the backbone for Australia becoming a powerful nation. WW1 and WW2 “incidentally” wiped two generations of powerful Australian men – crippling Australia’s productivity until the CE 1970s.

By CE 1940 the Oil Industry Lobby (OIL) in the USA was finally brought to account for treason (in the USA) by buying up trams and busses and then closing down these infrastructures – forcing USA workers to purchase USA manufactured cars to travel to and from work (and buying / using far more gasoline in the process).

Circa CE 1950 the OIL had moved on from the USA to Australia and the OIL started to lobby / compromise Ministers / Senators to close down Urban Tram infrastructures and close down Regional Rail infrastructures. Why? Because the OIL knew that people using Cars and Busses (not Trams) and (diesel fuelled) Heavy Road Freight vehicles instead of (diesel fuelled) Rail Freight – the Oil industry would sell far more petrol and diesel fuel than ever!

Circa CE 1960 the OIL heavily compromised / lobbied Ministers and Senators / Executives / Staffers etc. at all levels to have new road highways built – using diesel powered mechanical aides – burning lots of diesel fuel in the process! (It should be absolutely no surprise that the current Tunnel Boring Machines (TBMs) use an immense amount of Diesel fuel and the OIL is right there too!)

By the CE 1970s most of the rail maintenance had been “let-go” leaving the (Regional) rail infrastructure to then rapidly fall into disrepair – and that was then very easy to “close” thousands of km of otherwise good railway lines and replace that highly efficient infrastructure with diesel fuel guzzling B-Doubles (that compared to Rail Freight uses about 3 times the amount of diesel fuel (as massive pollution) per equivalent load over the same nominal distance)!

From about CE 1980, Australia had a very thin skeleton of rail infrastructure – that deliberately (by continuous compromising by the OIL) to not have upgraded rail alignments to get rid of tight bends – preventing most Freight trains from travelling much over 40 km/h. Meanwhile the (unsafe) Truckies motto was/is “time is money”!

Compared to highway constructions – that use an immense amount of diesel fuel in the process), in most Regional localities it would be rather inexpensive to cut / fill and straighten some lengths (say 1 to 5 km long) of railway lines that would then facilitate the safe running of Rail Freight at 100 – 200 km/h – and use far less imported Diesel Fuel in the transport.

The Melbourne – Parkes - Brisbane inland rail is a classical example of the OIL committing treason in Australia. This project should have been completed within a couple of years of its concept (i.e. by about CE 2010) – but this programme has been really dragged out and repetitively de-funded while far less efficient road diesel fuel guzzling highways are being proactively funded. Go Figure!!

**Service Quality**

**Ownership and Investment**

The Australian Railways are not owned by the Government but mainly owned by the ARTC (Australian Rail Track Corporation) – which is a “competitive business” running / building / destroying / operating / maintaining / wrecking etc. an infrastructure.

If the Australian Railways were owned by the Federal Government, then this would be as a sub-Federal Department – called a Commission – for example: “Australian Rail Track Commission” (ARTC).

A Corporation operates as an “Competitive Business” (explicitly for discretionary products and services), where as a Commission operates as an “Infrastructure Business” (explicitly for essential products and services). These two business models operate literally 180 degrees opposite to each other – but utilise each other for both be highly efficient.

Western economics deliberately avoids teaching about how and why “Infrastructure Businesses” are inherently extremely efficient, because this learning deeply impinges on the greed model of corporations where the “rivers of infrastructure gold” are heavily diverted out of the infrastructure builds and into Senior Executives’ “renumerations” / shares and lost in grossly inefficient Bids and Tenders etc. that are generally very expensive minimalist provision strategies!

Each State has their own Rail Transport Corporation – making this infrastructure even more inefficient. Sydney has part of the rail network privately owned connecting to the airport – greatly damaging the economic efficiency of rail urban transport.

**The Impact of Lagging Behind**

***Economic Implications***

There is absolutely no doubt that the OIL has utterly wrecked Australia’s highly efficient long-haul rail network infrastructure and replaced this with a very high maintenance road network that is regularly wrecked by Heavy Road Freight vehicles – and maximises the importing and sales of diesel fuel into Australia at an enormous cost to Australia’s Balance of Payments (BOP) – which in turn internationally cripples the Au$$.

Given this drastic treasonous deliberate rail wrecked situation and the realisation that the Freight Rail cars are 8’ (2440 mm) in width, and that Passenger Cars were also 8’ (2440 mm) in width but are now merging to be 10’ (3040 mm) in width – it is really time to look at Australia’s rail infrastructure from a “future view” and not be tied up in ancient rail gauge technologies based on coal mines.

Circa CE 1835 a very eminent English Engineer: Isambard Brunel came up with a very sensible rail gauge of 7’ (2140 mm) to be used with the then standard 8’ (2440 mm) width cars – used for Passenger and Freight purposes. Not only was this “broad” rail gauge far more stable than all the other far more narrow rail gauges, but this 2140 mm rail gauge could carry a substantially heavier load – and the wear and tear on the infrastructure was far less!

This situation put a severe shock through the established “competing” railway businesses in the UK – and they colluded to arrange for an Act of Parliament to effectively call their 4’ 8.5” (1435 mm) to be “Standard” – and outlaw all the rest!

Considering that rail construction is now done almost robotically, it would be a very straightforward strategy to move to a longer (iron re-enforced) concrete railway sleeper capable of bedding the 7’ 0” (2140 mm) rail gauge; and an option of the 3’ 6” (1067 mm), or the 4’ 8.5” (1435 mm) or the 5’ 3.0” (1600 mm) rail gauges!

Concurrently use Australian manufacturing to manufacture bogies and wheels / axles to ride on the 7’ 0.0” and mount on the standard Cars. The more narrow rails would be left in place firmly fixed to the new “wide” sleepers to provide substantial extra support.

Now – trains using the “Standard” gauge may be (safely) limited to say 120 km/h – but the same train using the “wide” gauge bogie could then be (safely) limited to at least 220 km/h – if not 300 km/h – with the straight(er) alignment rails!

In other words, the trip between Sydney and Canberra (about 300 km) would take about 1h20m to about 1h30m (with a stop at Goulburn). The trip between Melbourne and Sydney (about 900 km) would take 3h45m (with a few stops on the way).

With an east-west tunnel under Blackheath and dual “broad” rail via the Grose Valley – and a “straightened” (dual) rail line, the trip from Parramatta to Orange (about 210 km when “straightened”) would take less than an hour! Aa trip from Parramatta to Gosford (when straightened and “Brooklyn Bridged” (100 m high)) would be about 58 km and take about 15 minutes. Parramatta to Newcastle (about 132 km) would take about 40 minutes! I have other sensible “Quick Rail” strategies for the other Capital cities - including Canberra!

The other economic concern is that much of this could be electrified – but Wind and Solar are far too unreliable and very expensive (when all the factors are included – not shown in so called “Nett Zero” falsified accounting) – and we have to go back to coal and or move to nuclear ASAP.

**Environmental Concerns**

The pollution from diesel engined Road Freight / Passenger vehicles is at least three times that of diesel/electric engine Rail Freight / Passenger vehicles.

Yes the thought of going to electrification has a nice “feel” about it - but Wind and solar are far too unreliable and very expensive – far more expensive than coal and nuclear.

**Social and Regional Disparities**

What is needed is dual tracks not single tracks so that several rail vehicles can follow each other in relatively quick succession instead of waiting hours for the single line to be cleared – We can very easily afford that!

Consider that Qatar and Australia are the biggest exporters of LPG and both export about the same amount of LPG.

Qatar receives $76 Bn while Australia receives only $2 Bn.

While new rail infrastructure goes in we need to put in 3 \* 96 strand Single Mode Optical Fibre (SMOF) cables alongside the rail lines to provide regional connectivity that was “missing in action” when Telecom was privatised.