

Fast Rail Needs to Go Far

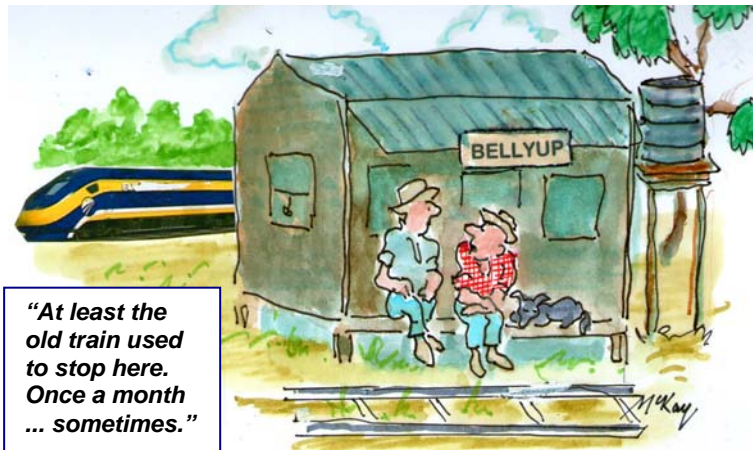
"Greens MP Adam Bandt has warned the government against thinking small, as it prepares to release a study into high speed rail for the east coast on Thursday. Mr Bandt says he is concerned that the government might prioritise a Newcastle-Sydney link over the Melbourne to Sydney route, the fourth busiest air route in the world. 'The government needs to adopt a big vision for high speed rail ... The government must not narrow its focus to the Newcastle-Sydney link. It is more expensive per kilometre and could doom the plan to just another great idea. The Minister for Infrastructure needs to look at the needs of the whole country, not just New South Wales. This can be a nation building plan which will be good for the economy and the environment. Linking the whole of the east coast – Geelong to Brisbane via Sydney and Canberra and regional centres – will really turbo charge regional economies and have a positive impact on the whole economy. It will help make our capital cities more sustainable. Even if the total price tag is up to \$100 billion we could pay for it in a decade by redirecting the \$10 billion in annual fossil fuel subsidies."

Ref: Adam Bandt, Media Release, 3/8/11

Feedback

"In reply to John Harland 19/8/11, Transport Newsletter #213, the recently produced East Coast High Speed Rail (HSR) Corridor Report recommends building a new rail corridor solely for high speed passenger trains with a proposed cruising speed of 350km/hour. The report dismisses high speed rail freight, however in France dedicated postal TGVs do operate.

"Normal rail freight would continue to use the current corridor; with less interference from passenger services freight transit times should fall. The current corridor is approximately 100km longer than the most direct HSR corridor between Sydney and Melbourne. There might be some synergies between HSR and normal freight services if the normal corridor could deviate to follow the HSR corridor due west from Yass to near Wagga and avoid the slow and sinuous present route via Cootamundra. A 3 track mainline over this section and south to Albury (and possibly Seymour) might both speed up freight trains and minimise the capital cost of high speed track building. Energy synergies would also be achieved by electrifying the normal freight route concurrently with the HSR corridor.



"Capital city centre to city centre transit times with HSR would be just under 3 hours nonstop. Along with greater passenger comfort, HSR offers the ability to transact business as you travel. In Europe, findings are that on rail journeys up to 4 hours HSR is seen as a better option than flying because of the lack of airport hassles and greater comfort. Between Paris and London, Eurostar now has close to 80% of the combined rail/air market. Centre to centre HSR times are now 2hrs 20 mins. Research has shown greenhouse emissions per passenger on Eurostar are 10% of those to fly. Cruising speed for Eurostar is 300km/hour.

"Embodied energy for HSR route construction is large, however the life span of the basic infrastructure is long – probably 100 years. Low embodied energy concrete, just as strong, has recently been developed. Railway rolling stock has a longer life span than aircraft and can be economically refurbished a number of times. The high quality HSR steel rails are recyclable to lower status rail routes when worn beyond further use for high speeds. Electrified HSR can use energy generated by all renewable as well as conventional sources.

"Gas turbine power cars fuelled by liquefied natural gas (of which Australia has lots, and which has half the CO2 pollution of diesel fuel) could be another HSR option."

Ref: John McPherson, 26/8/11

"I enjoyed reading this week's newsletter {#213}. In particular the articles by John Harland were quite interesting. I'm not sure I agree with him on the first one on high speed rail. ... The environmental cost of high speed trains will depend partly on how the electricity is generated, for example in France most electricity comes from nuclear which has very low emissions of GHGs (but many potential problems later on!)"

"The whole pedestrian/bike crossing issue interests me more:

- *Generally in Australia and New Zealand, it seems as John pointed out, the motorist has right of way even though there is a green signal for the pedestrian or bike. Drivers can get very aggressive and can try to intimidate other users. Visitors from the UK are amazed by this and in my experience often risk injury, as they don't expect to see vehicles bearing down on them. In the UK pedestrian crossings rarely have traffic moving through them, except perhaps on the orange flashing signal. It would be a good idea (especially in the Melbourne CBD) to convert crossings here to this sequence, but expensive. In the CBD there are a couple of good examples of this around Flinders Street Station.*
- *Often vehicles ignore the red light on pedestrian crossings entirely. Northcote High Street has a bad example of this. A plain-clothes policeman could have a ball. Strangely, the current Victorian Police campaign seems to stress that pedestrians have to take care when crossing roads!*
- *Regarding green light timings, on both pedestrian and bike crossings the delays after pressing the button are often way too long. Even if the lights have not been activated for some time there is often a long wait while cars with one person sail past. I often use the road crossing at Park St/ Nicholson St (Nth Carlton) for this reason, it's usually far quicker than waiting for the Capital City [bike] trail signals to change. Again, in other countries the lights seem to be triggered far more quickly. I wonder which road user they are designed for here? ...*

"The police seem keen on clamping down on jaywalkers, bikes on paths, bikes on pedestrian crossings, etc, but surely vehicles running red lights or failing to give way are far more serious threats to road safety. There is clearly a need for an attitude shift here. I wrote to Vic Roads about some of these points a few months back, ... and received a fairly bland reply. Melbourne City Council ignored me completely!"

Ref: Russell Adams, 25/8/11

Comparing Modes in Melbourne

"I live in Heathmont and [travel to] Doncaster. On occasions I have used four different methods of transport to travel to work:

- *Travel by car takes 20-25 minutes;*
- *I have cycled using the Eastlink/Eastern Freeway trail. It takes me 55 minutes in the morning and 60 minutes on the way home (slightly uphill on the way home – and I'm probably a tad tired after a day's work);*
- *Still a keen member of master's athletics, I have run several times over the years. Running takes me 1 hour 20 minutes.*
- *Public Transport is atrocious, I live only 900m from Heathmont station, catch the train to Box Hill, wait for a bus to travel along Elgar Rd take the bus to the corner of Elgar and Belmore Rd or Elgar and Wilson's Rd and walk about 1500m. Time: 1hr 30mins. As you can see from this you may understand why I don't use public transport!"*

Ref: Ashley Ryan, 26/7/11

Renewable Energy and Rail (Part 1)

"It will not be easy to run a national railroad on renewable energy like wind, hydro and solar power, but that is what Deutsche Bahn of Germany aims to do, for one simple reason: It is what consumers want. Deutsche Bahn says it wants to raise the percentage of wind, hydro and solar energy used in powering its trains from 20 percent now to 28 percent in 2014 and to become carbon-free by 2050 – targets that exceed the German government's already ambitious national goals. 'Consumers in Germany have made it clear they want us all to get away from nuclear energy and to more renewable energy', said Hans-Jürgen Witschke, chief executive of Deutsche Bahn Energie, which supplies electricity for trains in Germany. 'It's what customers want, and we're making it happen ... The demand for green electricity keeps rising each year, and that'll continue'.

"Prevailing attitudes in Germany were already decidedly green before the accident at the Fukushima Daiichi nuclear complex in Japan set off by the March 11 [2011] earthquake and tsunami. After the nuclear crisis in Japan, the Berlin government abruptly reversed course on nuclear power, shutting eight nuclear plants and vowing to close the other nine by 2022. That caught Deutsche Bahn – and German industry – off guard. The state-owned railroad had relied heavily on nuclear energy. But now the public and industry are increasingly attuned to sustainability and to what companies are doing, Mr. Witschke said. 'Environmental protection has become an important issue in the marketplace and especially in the transport sector', he said. 'Even though more renewables will cost a bit more, that can be contained with an intelligent energy mix and reasonable time frame. We're confident that cutting CO2 emissions will give us a competitive advantage'. There are still concerns about the reliability of renewables as their share rises toward 100% and before more storage capacity is available. What happens when there is no wind or sunshine? Some transportation industry analysts are sceptical. 'It sounds like a bit of green-washing', said Stefan Kick, an analyst at Silvia Quandt Research, a Frankfurt brokerage. 'Obviously, costs for renewable energy are going to be higher. Yet if customers are truly willing to pay, it could make sense'." {Continued in #215}

Ref: Erik Kirschbaum, Reuters, NY Times, 21/8/11

Melbourne Strategy Submission (Pt 2)

Here are some excerpts from my comments on the 2011 Melbourne Transport Strategy:

"Sooner or later, ferries will be plying Port Phillip Bay. Given the geographic (large, shallow bay of water), weather and demographic (population distributed around the bay) considerations, bay ferries will be of a different size and configuration to river ferries. It is relevant to note that San Francisco (which is the same latitude north as Melbourne is south) has a similar size bay in terms of trip distances (although their bay is a different shape). San Francisco is making good use of their ferries – and when I was there studying ferry systems in 2006 they were in the process of dramatically expanding their ferry routes.

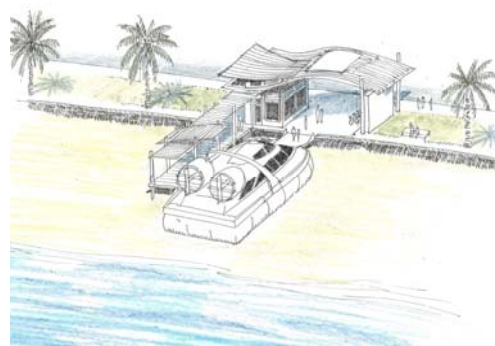
"One type of vessel – next-generation hovercraft – is particularly appropriate for Port Phillip Bay, and these would need to be completely integrated with current and new modes of active and public transport. They would complement, not compete with, the other transport services. Initial investigations suggest that key landing sites at the northern end of the bay could be Brighton Beach (railway station linked by existing tunnel); Kerferd Road (short extension to the #1 tram); and Port Melbourne (#109 tram). Other important northern-end-of-bay landing places would be St Kilda, Altona, Williamstown, Spotswood and given the development proposals: Fishermans Bend.

"Potentially hovercraft can travel up the Yarra River – at speed as they don't create wake – and deliver tourists and commuters to two places at Docklands but the working river port would make timetabled services problematic. This would be solved if or when the Port is moved (eg to Hastings) or by the hovercraft using a 'land bridge' (eg along the alignment of the disused rail line) thus avoiding the commercial Port. Bay ferry services could deliver commuters to the city in the early morning and carry tourists on the return trips (with the role reversed in the evening). Journey-to-work patterns show that a number of people live in the inner-west but work in Port Phillip so ferries could relieve some traffic through the city." {Continued in #215}

Stephen Ingrouille. 30/6/11



Sketches: Jenny Donovan, Inclusive Design



Beach side tunnel entrance to Brighton Beach Railway Station

Punt across the Yarra

"The Westgate Punt will extend operating hours to weekdays following a major financial commitment in [the 2011 Victorian] State Budget. The service will operate during peak commuting hours for pedestrians and bike riders. The existing weekend service will continue. It will most likely ply its trade from new or different jetties so that the journey distance and time can be reduced, enabling more services to be offered. The tender for the expanded operation is set to be awarded in mid 2012. It is expected that the details of the new route and jetties will need to be finalised before the tender process goes ahead. Bicycle Victoria CEO Harry Barber said: 'The punt could work out for commuters if the operators could reduce the journey time to an acceptable level. Currently the trip on the diagonal across the Yarra takes too long. Riders could be half way into the city along the bike path in the time it takes to cross on the ferry. The other factor is that the route into the city via Lorimer Street has to be improved if commuters are going to take the ferry across to Port Melbourne. Just running the ferry on a weekday schedule is not enough to make this plan work'."

Ref: Media Release, Bicycle Victoria, 4/5/11

Making Fuel from Thin Air (Part 1)

"What if the ever-increasing amounts of carbon dioxide that are heating up the atmosphere could be used to produce an abundant supply of liquid fuels? A novel experiment is taking place in the Princeton University lab of chemist Andrew Bocarsly. Like a battery, the experimental device has two poles of charged materials resting in a bath of chemical-laced water. A small tube bubbles carbon dioxide (CO₂) into the device, called a cell. The CO₂ interacts with the charged metal coating one of the poles and, with the help of a special catalyst, begins to form bigger molecules that combine carbon, hydrogen, and oxygen atoms.

"These bigger molecules have a more common name: hydrocarbons, the molecules that make up the fuels that power the modern world: coal, natural gas and oil. And what Bocarsly and his colleagues have done is essentially reverse combustion: they have taken the by-product of burning fossil fuels – CO₂, the greenhouse gas most responsible for climate change – and transformed it back into a fuel suitable for burning. 'The dominant thinking 10 years ago was that we should bury the CO₂', Bocarsly says. 'If you could efficiently convert CO₂ into something that was useful you wouldn't have to spend all that money and energy to put it into the ground. You could sort of recycle it'.

"The experiment in Bocarsly's lab is part of an intensifying research effort to transform the copious energy from sunlight into liquid fuels by improving upon the work of plants, which, using only energy from the sun, take CO₂, fuse it with hydrogen split from water, and make molecules to fuel growth. These ambitious energy projects would recycle CO₂ emissions by allowing CO₂ molecules to switch back and forth between by-products of burning and building blocks of new fuel. It's a potentially revolutionary technology, and the problem is not so much in pulling off the transformation – at least four different approaches to carry out 'reverse combustion' either exist commercially or have been demonstrated in laboratories – but the high cost of doing so. 'Since the sun provides enough energy for our needs, our goal is to make a fuel using CO₂ and sunlight – and maybe water – as feed-stocks to produce the chemical fuel that can store the sun's energy in a form that we can use where and when we need', writes chemist Michael Berman of the US Air Force Office of Scientific Research, which is funding much of the research. 'We hope that this is something that can be done in an economically viable way'.

"Attaining that goal remains a distant prospect. But the potential payoff of these long-shot experiments is so great that the US government, various labs, and some start-up companies are pumping sizeable amounts of money into the research. The technologies include producing methanol in a lab, harnessing microbes found in extreme environments to produce fuels, replicating the process of photosynthesis itself, and using sunlight to forge a synthetic fuel made of hydrogen and carbon monoxide.

Creating Liquid Light

"In 2003, chemist Emily Barton took up a discarded experimental device that had been languishing in her mentor's Princeton lab for more than a decade. She was searching for a novel solution to the growing problem of CO₂ piling up in the atmosphere and changing the climate. The device – an electrochemical cell that transforms electricity into chemical reactions, or vice versa – employed an electrode made from the silvery white metal known as palladium and a catalyst called pyridinium, a

byproduct of oil refining. When Barton's predecessor and inventor of the device, Lin Chao, applied an electric current, the cell knitted CO₂ into methanol, the simplest hydrocarbon.

"When Chao had written about the device in 1994, it was largely ignored. But Barton reasoned that turning CO₂ back into a useful product like methanol could provide a solution to the CO₂ problem. Even better, she could tweak the device by adding a compound used for thin-film photovoltaic devices, gallium phosphide, and turn the cell into a solar-powered fuel maker. Although this photovoltaic route is currently prohibitively expensive, venture capitalists have funded a start-up company, dubbed Liquid Light and based in New Jersey, to try to turn this electrochemical cell into the fuel refinery of the future. The company has replaced the expensive palladium electrode in the original with something cheaper and may not use pyridinium as the catalyst. 'The only inputs we need are waste CO₂, water and electricity', says Liquid Light chairman and physicist Nety Krishna, noting the technology's potential to simultaneously help solve two huge challenges – global warming and satisfying the world's growing energy needs." {Continued in #215}

Ref: David Biello, ABC Environment, 6/6/11

www.abc.net.au/environment/articles/2011/06/06/3232934.htm



Image:
Rick Piper

Car Parking Alternatives

"The legal number of spaces per dwelling could be cut from two to zero in dozens of activity zones to accommodate Melbourne's booming population. And the car park requirement is set to be halved in many residential, entertainment and business centres outside those zones. The proposals are part of a Planning Department review that aims to reduce reliance on cars and encourage other ways of getting around, such as public transport and bicycles."

Ref: John Masanauskas, Herald Sun, 15/8/11

"Residents at a planned [Melbourne] inner suburban apartment block will be given Myki cards instead of parking spaces in a bid to cut carbon emissions. The Fitzroy development will also feature a 22-slot bicycle rack, a raw food restaurant and communal vegetable garden.... Developer Karanlight Pty Ltd is planning 12 apartments for the former factory site. But there will be no parking spots. 'The development is well positioned to attract residents who wish to enjoy the benefits of inner-city living and have little or no need for a private car', Karanlight said in a submission to council. Instead, residents will be provided with annual Myki cards, bike spaces and access to a car share scheme. Yarra's Greens Mayor, Cr Alison Clarke, said yesterday that while council was still to decide on the application, it generally supported efforts to reduce car numbers to promote liveability. 'We consider requests to waive or reduce car parking requirements for new developments on a case-by-case basis', she said. 'We take into account matters such as whether the site is near a train line or whether it is well serviced by other public transport'. But Cr Clarke conceded that some existing residents were worried that new developments with limited on-site parking would result in more competition for on-street parking spaces. The development boasts an average energy rating of 7.1 stars with plans for solar heating, rainwater collection and reuse for garden taps, toilets and washing machines. A roof terrace would include a vegetable garden and communal laundry."

Ref: John Masanauskas, Herald Sun, 25/8/11

And Also ...

"Train Announcement: 'Attention passengers in the first carriage, do not step onto the platform, it is not there'."

Ref: mX, 24/8/11

Solar Roadway

"Solar Roadways Inc ... has spent five and a half years working on the concept of an 'intelligent pavement' that generates electricity, acts like a power grid, and has the ability to melt snow and ice. In 2009, the FHWA awarded the company a US\$100,000 contract to build the first solar panel prototypes. Founder, Scott Brusaw said the latest, two-year contract will help advance the prototype to the point where his company could begin attracting investors for future commercial production. It will also help with production cost estimates. Brusaw says the funding will also cover a smaller-scale project that could serve as a first step; a solar parking lot. He will install the solar panels outside his electronics lab near Sandpoint, Idaho. Each of the 3.6m square (12 feet) panels will produce about 7.6kW hours of electricity daily. Four of the panels would supply a typical household's electrical needs. Brusaw said: 'We'll do our own parking lot first, so we can monitor it 24/7, get all our data and start seeing how it holds up under all kinds of load tests. Parking lots are a good test site for the solar panels, because the vehicle traffic is lightweight and slow-moving'. Brusaw also envisions the solar panels in driveways, patios, playgrounds and residential streets. 'The ultimate goal is the nation's highways', he said."



Image: Traffic Technology Today

Ref: Traffic Technology Today, 17/8/11

Oil Mallee

"The oil mallee industry has welcomed Federal Parliament's passing of the Carbon Farming Initiative, which could offer carbon credits to farmers from as early as November. The industry association promotes mallee trees for stopping salinity, reducing wind erosion, and for harvest of the oil and biomass for fuel. Association general manager Simon Dawkins says farmers can now count trees they planted after 2007, calculating the carbon for trading on both domestic and international markets. 'The farmers themselves can engage in the practice and don't have to separate the project from their farming operation or lease out the land to another farming operator', he said. 'They can undertake the project and retain the credits and look forward to trading them when they want to'."

Ref: Sarina Locke, ABC Rural, 25/8/11

www.abc.net.au/rural/news/content/201108/s3302008.htm

More on Peak Cars

"In cities all over the industrial world, people are driving less. Changes to society and the structures of our cities have made jumping in the car less popular. But what does this mean for people who have no choice but to drive? In most American and Australian cities, car use has been declining since early this century. Stanley and Barrett's 2010 study found car use has been dropping per capita in Australian cities since 2004. Between 1995 and 2005 our data showed no growth in car use at all. So why is it happening? There are many factors to which declining car use can be attributed.

"The first is a cultural shift. Younger people want a more urban lifestyle, one where they don't have to drive as much. They want to be around friends and around urban activity without long commutes from distant suburbs. We're even seeing this among older Australians, who want to live somewhere they can drive less and walk more, particularly as it becomes more difficult for them to drive. At the same time, we're hitting the wall with sprawl. A city can only grow so far before it becomes dysfunctional. In most Australian cities, suburbs have been going out for a long time, and freeways have been built to bring people back in. But now the freeways are full, and commuting is just taking too long. Marchetti's Constant {see #210} tells us that most people – no matter where they live or how they travel – won't commute more than an hour a day. For many people in Australian cities, this 'travel time budget' is being breached.

"When people have to commute for longer than that, they can get angry. And we're seeing that for a lot of these people, the solution is to move back into the city. At the same time, fuel prices are going up.

The acknowledgment that petrol isn't going to get any cheaper is to some extent killing off the idea that cars are a critical part of life. In fact, for many people, cars have become less a desirable commodity, and more of a burden. For people who are dependent on their cars, it can become very hard to keep control of the budget when fuel prices are so unpredictable. Many of these people don't have the option of moving closer to the city. High real estate prices and poor public transport mean the only option is outer suburbs and long, car-bound commutes.

"The future for these people isn't promising. The outer suburbs will become places where only the poor will live. Opponents of development, such as Save our Suburbs, have campaigned against inner-city densification on the grounds it will create ghettos, but the real ghettos are going to be on the urban fringes. The wealthy are moving. They're finding places to live where it's easy to get to activity, where there's plenty of public transport and where there are good walking conditions. City centres are becoming kind of eco-enclaves: you can see that in the Greens vote. But it's more and more desperate the further out you go. Australia's 50-year suburban experiment isn't delivering all the wonderful things we'd hoped for. The great Australian dream is actually a bit of a nightmare.

"Governments aren't really addressing this issue. They talk about developing polycentric cities with substantial employment and activities in the suburbs and small cities. They say there should be good public transport linking them all together. But in most cases they haven't worked out how to fund or implement these plans. It's just talk. In fact, most of the planning bodies in government departments still assume further sprawl and still assume more car use. There are always going to be journeys that are too difficult to make by foot, bike or public transport. There will always be places that are difficult to reach without a car. And for many people with disabilities, a car is vital. But cars need to be just a part of the package, not the soul of our transport system. We've been planning as though we can't live without cars. We have almost killed our cities in the process."

Ref: Peter Newman, The Conversation, 29/5/11

<http://theconversation.edu.au/driven-to-despair-in-australias-outer-suburbs-1435>

Seattle aims at Climate-Neutral

"Seattle hopes to become the world's first climate-neutral city. It's no small task: The city must account for, and reduce, the carbon footprint of everything from transportation to trash for hundreds of thousands of people. Green urban travel shouldn't be about guilt trips or prohibition but about making the good choices easy."

Ref: Yes Magazine, 5/8/11

In next week's Newsletter there will be an article by Richard Conlin, President of the Seattle City Council, on 'Smart Travel by Choice' from Yes Magazine.



"Making smart choices easy: In Seattle, the light rail is the cheapest option from downtown to the airport."

Photo: wings 777, Yes Magazine