

## **ENHANCEMENT OPPORTUNITIES FOR ADELAIDE METRO RAIL**

The Trans Adelaide metro rail network is small by any standard - four main routes and two branch lines, plus a single tram (light rail) line that is separated from the main network by gauge differences. There are around 120 km of rail routes and 15 of tram.

Passenger numbers on the rail network are around 8 million per annum, but with a recent turnaround in patronage trends now showing some growth. A figure of 4% growth over the last two or three years has been quoted, which follows many years of generally declining use.

The rail network has 100 self propelled diesel rail cars of two basic types, of which only around 90 are required to cover current car rosters. These cars generally run in one or two car sets in the off peak to a basic half hour frequency, although on the two major routes (Gawler and Noarlunga) a quarter hour frequency is provided for part of the off peak using quite an innovative mix of stopping conditions.

Although the maximum speed for the railcars is 90 km/h they are only able to reach these speeds in a few places on normal stopping services. Times taken on each line vary according to frequency of stops and the alignment of the track, but generally trains average around 30-40 km/h for all stations services.

Adelaide has expanded into significant new areas in the last fifty years, with public transport expansion being almost entirely provided by expanded bus routes. Only where new development has occurred adjacent to existing railways has there been some growth in the direct rail passenger catchment.

The exception of course was extension of the Hallett Cove line to Noarlunga in the late 1970's. This was initially a freight extension to serve the then new Mobil refinery, being subsequently extended to Noarlunga and opened for passenger services. This line, just like a number of new metro lines in other states, is now the busiest of the Trans Adelaide routes. Without the Mobil development it is quite likely that the extension would have been built. It was the synergy of an industrial development, bringing the need for freight access and a new population to operate the refinery that facilitated the creation of the Noarlunga line.

The old South Australian Railways were broad gauge, at least for all the tracks in the Adelaide region. In those days (pre 1970) a unified system was able to operate over the whole regional network. There were freight services on most suburban lines, while at peak times country cars and locomotives were able to be drafted in to handle exceptional crowds. Progressively over the years between 1982 and 1995 the long distance rail network around Adelaide was converted to the national standard gauge leaving the Trans Adelaide metro network and a couple of short country lines (Roseworthy and Barossa routes) remaining as isolated broad gauge routes.

There is only one regular freight train on this network - the stone train from Penrice - while seasonal grain trains run from the Roseworthy line. In total the income to Trans Adelaide from freight operations is very restricted, yet the system is maintained in a condition suited to contemporary freight operations. A short section of dual gauge in the Port Adelaide area would be by far the busiest freight section of TA, and the majority of that would be on the standard gauge.

What then can Trans Adelaide do (assuming the bureaucracy allows it some leeway to manage its own affairs) to improve its long term opportunities. In general these will come under headings of revenue enhancement, cost reduction, and lateral business opportunities.

TA is reporting a steady but limited passenger growth after many years of decline. Opportunities for passenger growth are limited on a fixed system, being depended on demographics of the city (which in Adelaide do not favour rail), growth of on line populations and placement of employment and social facilities. Improvements in service quality, such as quarter hour frequencies, may have some effect, but they come with a cost attached. In general it would be fair to say that it is unlikely that there will be any spectacular growth in passenger numbers and revenue.

Cost reductions have been largely achieved by TA over the years. There may be some scope for reduction of labour costs from more flexible and efficient rostering, but otherwise there is only one major cost area that can present significant savings. Trans Adelaide is not in particularly good shape. The recent provision of concrete sleepers on the Outer Harbor line has made a very noticeable improvement to that line, and although not so obvious will have very significantly reduced to maintenance costs on that line. It is understood that TA have plans to progressively improve other routes the same way over the next few years. Possibly the single most significant aspect of the concrete sleeper project is the use of gauge convertible concrete sleepers. These are capable of taking broad or standard gauge track, or as has been done in the Port Adelaide area they can take dual gauge. There is a small cost premium for gauge convertible sleepers but the future benefits could be enormous.

Lateral business opportunities involve doing things to make use of the spare capacity of the network to generate income for the rail network. These can broadly be categorized as use of land (and air rights) and use of the rail network.

In Adelaide, with its wide open and largely flat terrain there are few immediate opportunities for 'air rights' developments such as have happened in other cities. Hong Kong has developed this concept to a fine art with massive residential developments over stations generating very substantial income for the railway such that they are very profitable. Hong Kong has a population not far short of that of Australia, and occupies a very small land area, so this sort of development is quite logical there. Such a situation is not likely in Adelaide with a few minor exceptions. The more likely land development for TA is the spare land adjacent to rail stations.

The minimalist development will be for car parks to simplify access to the rail network. Beyond that there may be opportunities to use the land (maybe in conjunction with adjacent private land) for industrial or commercial developments that will enhance the use of the rail system while also generating a direct 'rental' income. Once again there would not seem too much opportunity here, and given the almost total lack of good town planning over the city it is unlikely that we will be able to move far from the laissez faire style of things that currently exists.

Commercial alliances with shopping centres and employment sites may be another avenue. Deals to have these places bulk buy public transport travel for issue to their employees, in conjunction with service enhancement for the facility, might be one avenue. Cross relationships that promote each other might be another. The factor most important is that the alliance will need to be with a facility close to the rail network or able to be linked to it with dedicated connecting services.

Increased utilisation of the rail network is severely constrained by the break of gauge. There are a number of rail freight opportunities in the Adelaide area that are simply unable to be achieved due to the difference in gauges. Provision of gauge convertible concrete sleepers, as is planned, will not only reduce maintenance costs but will allow low cost conversion of the network at some time in the future. And this would bring a number of very significant benefits to Trans Adelaide.

At this point it might be useful to look at the recent proposal for a grain port at Port Stanvac, not so much for that particular project but as an example of the synergies that could be achieved from the opening of the Adelaide rail network to standard gauge freight operations.

The proposal was to put a grain terminal and shipping berth at Port Stanvac, on land occupied by Mobil, to achieve a true deep water grain port for the Adelaide region. This would not only achieve a long standing objective of the grain industry, but would make the Mobil refinery just that bit more viable. The key element required to allow the port project to go ahead was connection to the standard gauge network. Something over 80% of grain in the Adelaide region is now on standard gauge. The proposal was to initially dual gauge the tracks between Goodwood and Stanvac to allow standard gauge freight trains to access the new facility without disrupting the existing passenger network.

When it became clear that Trans Adelaide had a plan to put gauge convertible concrete sleepers in on the Noarlunga line it became apparent that there would be considerable benefits to both the projects from advancing the timing of the concrete sleepers and concurrently adding the third rail to provide dual gauge. The cost to dual gauge on the existing track would be around \$16 million, but as an increment to concrete sleepers it could be as low as \$5 million and certainly no more than \$7 million.

The benefits to the passenger rail system would be a better ride, faster schedules from reduction in track restrictions, and a reduced requirement for track maintenance and consequent delays. The major gain however would have been between \$250,000 and \$500,000 income per annum from track access fees from freight trains running on the line. The benefits for industry would have been access to the Mobil site with standard gauge trains, allowing the development of a new grain port, removal of some volatile fuel from suburban roads, reduction of transport costs for Mereenie crude oil from Alice Springs, development of a bio-diesel plant and access to the national rail network by the relatively under-privileged southern industrial enclave around the Lonsdale area.

Extension of the concrete sleepers across the Trans Adelaide network (advanced by a couple of years as a result of the Stanvac project) would have put them in the position in about 6 years to convert their network to standard gauge. This might cost in the region of \$10 - 15 million but would allow some significant benefits. These include

1. Ability to use standard components for track work, standard machinery for track maintenance and run a reduced inventory of spares as a result.
2. Provided ARG also converted their tracks north of Gawler, would result in the complete removal of breaks of gauge from the South Australian rail scene. (conversion of the ARG network would cost around \$3.5 million)
3. Would allow Trans Adelaide to hire in or acquire standard gauge rolling stock from other operators around the country.
4. Would allow Trans Adelaide to run trains into any location in the Metro area, which might include longer distance services into Adelaide (Casino) station or promotional visits by Indian Pacific to say Noarlunga if the opportunity ever arose
5. Would allow Trans Adelaide the opportunity to run trains (special or scheduled) to places beyond their current network.
6. Would allow Trans Adelaide rolling stock to be sent to any standard gauge location in the country for repair or maintenance
7. Would allow freight operations over Trans Adelaide tracks to industrial sites now isolated by breaks of gauge, with consequent income generating benefits.
8. A common gauge would allow integration (re-integration?) of the Glenelg line and the rail network, with opportunities for interesting short extensions through the city and North Adelaide areas to serve a number of lines. As such this might also bring forward the almost forgotten desire to electrify the rail system here in a more practical way than in the past (Perth, which has a similar small network, has gone from a similar number of passengers to Adelaide to around 50 million as a result of electrification)

The standardization of TA and ARG broad gauge in South Australia would make Adelaide only the second city in Australia after Sydney to be served entirely by a single gauge railway network, with consequent flexibility for both passenger and freight. ARG would gain significantly in better utilisation of their locomotives and rolling stock.

A major benefit for South Australia would be the linking of all rail served locations in the state (other than the Eyre Peninsula) with an integrated network that would provide direct linkage to the national rail network. South Australia is remote from most of the major markets for manufactured goods in Australia, and better transport connections can only help to break down that impediment to the economic development of the state. Industries such as the Angaston cement works, the mid north hay and chaff distributors, Mitsubishi and GMH plants, Mobil refinery, and Barossa and Southern Vales containers all would find themselves on the national rail network

The Stanvac example has been used to show that there are a series of synergistic developments that would allow the Trans Adelaide rail network to survive firstly, and more importantly thrive if the right set of decisions and commitments are made. Although the Stanvac Grain Port seems to have been stymied by bureaucratic self interest and lazy politics, there are significant revenue opportunities out there from freight train operation to regional freight nodes. The critical factor, in fact in some ways the survival factor, for Trans Adelaide rail is to standardise and the critical issue to achieve that is to complete the concrete sleeper project in a reasonable time frame.