

# **Rail in the next decade: where to and how?**

Rail Forward Vision Task Force

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# Contents

<b>Summary</b> .....	<b>v</b>
<b>The context</b> .....	<b>1</b>
Where have we been? .....	2
Where are we now?.....	3
Where should we be going? .....	4
<b>The view from 2010</b> .....	<b>7</b>
Steady as We Go .....	7
Key features .....	9
Leadership and Vision .....	10
Key features .....	16
<b>Conclusions</b> .....	<b>17</b>
<b>Appendix A Australia’s land transport tasks</b> .....	<b>18</b>
<b>Appendix B The report card</b> .....	<b>19</b>
<b>Further reading</b> .....	<b>20</b>
<b>About the RTSA</b> .....	<b>20</b>



## Summary

The last 20 years have been a period of great change for rail. The main changes have been prompted by national competition policy and a common desire across most jurisdictions to be rid of continuing financial burdens. At the same time, rail has made significant technical and structural advances on its own account. The changes to date have, however, been insufficient to boost the industry's profile or give rail a positive image at both the community and the political levels. Rail is no longer seen as a vote winner, so it receives little attention from government when it comes to public policy and investment. And, as an industry, we have lost sight of our own ability to control and direct much of what is needed for a healthy, vigorous industry.

Rail's development during the next 10 years is very dependent on the attitude the industry adopts. At worst, we would continue to lose market share, as some Bureau of Transport and Regional Economics forecasts predict. Rail would then find itself increasingly irrelevant.

A more likely situation is 'business as usual'—an extension of the past two decades. But this situation has not provided rail with any great wins in the recent past and is unlikely to do so in the future. The outcome for rail under this situation is as much determined by external events as by the industry itself. The industry will lose control of its destiny.

We need to raise our sights—to a long-term, self-directed future with significant increases in rail's share of the land freight and passenger transport tasks. In this way rail will gain increasing community and political support.

Our industry is not alone in having to come to terms with the future. Governments, organisations and individuals worldwide are all having to grapple with their prospects. What is needed is for rail to be better than most at adapting; that is, we need to be more flexible, visionary and innovative in how we deal with the future. Along with upgraded infrastructure, 'leadership and vision' are essential if rail is to achieve a long-term, secure position in Australia's land transport activity. This is our vision.

Rail must encourage strong leadership within its own ranks, visionaries and innovators who can draw rail forward faster and more effectively. The vital ingredients are leaders—and younger people who are persuaded to join the industry because of its exciting future and are then trained and nurtured. Career-path planning, succession planning, and training and development are among the most important ingredients of the vision for the future of rail. With these ingredients rail will be able to develop the 'can do' attitude that will drive it forward to an increasingly relevant, productive future. This has to be good for the industry and the nation.



## The context

In the last 50 years the character of the Australian rail industry has changed dramatically. Where once it consisted of wholly government owned organisations offering jobs for life and serving a confused set of objectives, we now have clearly differentiated freight and passenger operators (both government and private) operating to relatively commercial goals using track that in some cases is independently owned and locomotives and wagons that are sometimes leased.

The journey to the current position has not been without difficulty, especially during the most recent decade, when the rate of change has been something more than any rail person or organisation had previously experienced. From a public point of view, rail has gone from being a relatively high profile and necessary service to something that, outside the metropolitan areas, is largely invisible. The cost of this has been a steady erosion of political interest in rail, to the point that rail is now seriously disadvantaged in relation to its prime freight competitor, trucking.

Long-distance passenger business has been reduced to mainly tourist experiences and subsidised travel: air now has almost complete dominance on trunk routes; the private car dominates elsewhere. Rail's only possibility of reversing this situation lies with VFT-type services, which thus far seem to have been well outside the political taste range. With the exception of Adelaide, urban rail services have flourished in recent decades, propelled by the knowledge that the alternatives are increasingly costly and unpalatable, from both the political and the environmental perspectives.

Rail has progressed technically, within the limitations of long-distance low-volume operations, but at a rate that has not kept up with the competition. This is particularly the case with infrastructure, which essentially remains as early 20th century alignments with mid-century track having to compete with profligate spending on realigned multi-lane highways. There is little argument that most road construction costs are primarily to do with heavy trucking. Compare this with rail, where there has been at best marginal improvement to handle freight trains. In many cases rail has stood still or gone backwards; an instance of this is the failure to extend freight access routes out from the centre of Sydney as the metropolitan area has grown. Various standard-gauging projects between 1960 and 1995 have served only to highlight the parlous state of rail infrastructure in a highly competitive environment.

As the Bureau of Transport and Regional Economics keeps reminding us, the coming decade could see a further erosion of rail freight's position, the result of a 'do nothing' attitude. On the other hand, we could see some move towards a substantial role in freight haulage or, if everything went well, there might be spectacular gains. Urban and regional passenger operations will presumably continue to flourish, but it is quite likely that long-distance passenger trains—apart from the few quality services such as the Queensland Rail tilt train—will slowly go the way of ocean liners, surviving only as travel experiences.

Rail has some ability to change direction and determine its own future, provided that the industry (including those political jurisdictions that remain as rail owners—operators) takes concerted, cohesive action. This vision statement points out the opportunities and pitfalls that lie ahead for rail.

## Where have we been?

By the end of the immediate post–World War 2 period rail was in a very run down condition, largely as a result of the Depression’s stifling of development and improvement in the decade preceding the war. In contrast, the economy was running reasonably well: there was considerable growth in manufacturing and, more slowly, mining, and the major cities were growing extremely rapidly, absorbing huge amounts of resources just to create and service the new areas. Rail’s priority, at least until the 1960s, was to recover in terms of motive power and rolling stock; only limited attention was paid to infrastructure and safe-working systems. Apart from a couple of niche players in the mining industry, the industry was entirely government owned and quite traditional in its management. Meanwhile, roads, and particularly trucking, were moving into the traditional rail freight markets.

During the 1960s and 1970s rail rather lost its way. There was, however, a dawning awareness of the costs inherent in some rail activities, particularly in freight, and slowly a process of change began. In many respects the level of rail deficit was the driving force behind the owners’ (governments’) recognition of the need for change, but things had had to become really bad before it was even recognised that there was a problem. Urban rail became the centre of most government attention and action, largely at the expense of freight. At the same time interstate freight grew rapidly, becoming a major factor in the overall freight market. With its state (as opposed to national) orientation, rail was in a poor position and, more than anything else, the resultant interstate mess was what precipitated efforts to develop a national approach to rail reform in the late 1980s.

During this time increasing attention was given to roads, with the concept of national highways evolving in the late 1960s to capture the imagination of the federal government. Faced with the combined impacts of the road lobby and governments’ progressive detachment from rail ownership, rail slowly but surely slid off the political agenda. Disposal of rail ownership was the precursor to a policy vacuum in relation to transport in general, a problem rail has done little to redress. The current position is that four major government railways have been privatised and one remains a government enterprise.

But technology has marched on. Diesel locomotives have gone from around 1500 to 4000 horsepower, with substantial fuel-efficiency gains along the way. Freight wagons have universally changed from four-wheeled wagons to all bogie. Intermodal rolling stock is now the largest part of the fleet after bulk (coal and ore) wagons. Axle loads have risen from typically 16 to 21 tonnes, although loads of 25 tonnes and more are now common in bulk hauls. Passenger rolling stock has changed dramatically, aided by the abandonment of most of the traditional longer haul services. All-steel, air-conditioned, increasingly self-powered train sets are used to provide much higher service frequencies in the capital cities and their surrounds. Sydney is notable for its all-double-deck electric multiple-unit fleet. The growth of urban passenger services, and the associated political sensitivities, now constrain the operations of freight trains where shared infrastructure is used.

Apart from the completion of standard-gauge links across the country, infrastructure development has been more subdued. More track is at mainline standard, but in the vast majority of cases it remains exactly where it was laid down up to 145 years ago. In the last decade of the 20th century significant workplace changes—including the disappearance of the ‘job for life’ mentality and a high degree of portability between organisations—transformed the work environment for both employees and unions.

## Where are we now?

At the start of the 21st century rail in Australia finds itself part-way through a period of intense change, which in one way or another will determine its future. Despite numerous reports that clearly point to policy and action vacuums, the Federal Government has all but abandoned any interest in the industry. The state governments' attitudes vary, with Western Australia, Victoria and Queensland being ahead of the others on rail and transport planning. In general, rail no longer features on the national political agenda, despite evidence that the public is highly supportive of rail as a means of removing trucks from roads and protecting the environment. A flicker of hope lies in the recently announced AusLink land transport policy—provided the rail industry can act cohesively to get its views and needs taken into account in the working policy.

National competition policy has had its effects. Creation of a rather confused set of 'open access' regimes in the various jurisdictions has been the trigger for development of competition within the industry. Many of the rail operators, old and new, are becoming quite talented at 're-cutting the cake'—redistributing existing rail traffic among themselves. There have been some gains from road, but as long as competition policy focuses on rail instead of land transport the outcomes will be sub-optimal. Similarly, as long as cost recovery and funding for access to rail track are treated differently from road, it will be difficult to develop a transport system that meets national efficiency objectives. If it is to be effective, the recently announced federal land transport policy, which seeks a unified approach to road and rail, will need to tackle a wide range of matters, such as competition policy and differing project-justification processes.

Two track access authorities (the Australian Rail Track Corporation and the Rail Infrastructure Corporation) control the lion's share of the national network; differing structural arrangements exist for the same purpose in Western Australia, regional Victoria and Queensland. In a sense, ARTC and RIC represent different approaches to the access question. It is of note that ARTC has the greater proportion of multi-user operations on its track and that its market share has grown from 65 to 77 per cent on the east–west route over four years.

There are four main private freight groups (Pacific National Railway, the Australian Railway Group, Freight Australia and the Australian Transport Network); there is one government railway (QR). As a result of open access, a number of niche operators have emerged in the last few years, but they are generally confined to regional operations and are constrained by limited resources. Even some preservation railways have joined in making their equipment available for commercial hire. In the passenger domain, there are the privatised Great Southern Railway and Melbourne's three major and two minor privatised passenger operations, while in Adelaide, New South Wales, Western Australia and Queensland the passenger businesses remain with government. Only in Queensland are the passenger and freight businesses under unified ownership.

Rail's technical standards have been improving progressively, although arguably not keeping up with the rate of improvement in trucking. Locomotives of 4000 horsepower are pushing the boundaries for relatively lightweight equipment, while wagon design has progressed to 25–30 tonne axle loads for coal and efficient articulated and double-stack designs for intermodal. Track has improved, not so much in specification but more in terms of the reduction in track of 'branch line' standard and improved husbandry to allow better utilisation of the existing main-line structure. Signalling has followed a relatively traditional

and expensive course, with the elusive universal ‘low cost in cab’ system yet to emerge. Adoption of the age-old train order system everywhere except in New South Wales has been a low-cost stopgap measure that functions adequately with the reduced number of bigger trains now found on most secondary lines. Radio communication is now well established, although there is such a range of frequencies and technologies that many of the advantages are lost for all but local operators.

Perhaps the biggest single failing is the continued acceptance of 19th century alignments on many of the main lines, particularly on the east coast. In the last 50 years there have been few, if any, improvements in alignment—with the notable exception of the north coast line in Queensland, which has been redesigned to allow faster transit, reduce operating costs, and generate higher resource use.

### **Where should we be going?**

Of course, it is not possible to document the future with any certainty. It is thus necessary to place some bounds on the range of possible events—to create different scenarios. Two scenarios might reasonably represent the range of futures for rail:

- *Steady as We Go.* This involves a continuation of the experiences, practices and activities of the recent past—a business-as-usual scenario.
- *Leadership and Vision.* Rail takes control of those things it can manage for itself, as well influencing the environment in which it operates, particularly on the political, policy and equity fronts.

In reality, there is a third scenario: rail takes strides backwards toward its eventual demise. This would assume an abandonment of hope by the industry, so it really has no place in a vision document. Vision is about what we want the future to be and the actions that are needed to get to that future. In fact, our sights should be set as high as possible, looking at imagination and creativity in Leadership and Vision. We *must* aim high.

Life is a continuum: the events of yesterday and today will influence tomorrow. In the rail arena there are a number of committed projects, others that will probably go ahead, and quite a few things that, with good management, are possible; in parallel, there is an array of external factors that will also influence our futures:

- committed or recently completed projects
  - the sale of National Rail/Freightcorp
  - the Rail Code of Practice
  - open track access
  - the Alice Springs – Darwin railway
  - the Rail Cooperative Research Centre
  - standardisation of half of country Victoria
  - high-speed regional rail in Victoria
  - leasing, rather than ownership, of rolling stock

- offshore construction and supply of rail equipment and vehicles
- CargoSprinter
- various urban passenger projects
- probable projects
  - Sydney freight access
  - a regional high-speed service to the Gold Coast (extension) and the Sunshine Coast
  - the Mt Gambier re-gauging and re-opening and limited re-opening of closed lines in other states for specific needs
  - improved and/or additional city intermodal terminals
  - resurgence of private sidings with short-block train operation
  - the ARTC 'one-stop shop' from Brisbane to Perth
  - maturing of the rail lobby
  - more efficient rolling stock, particularly for intermodal—swap bodies, better load-tare ratios, improved payload per metre, and so on
  - better braking—dual-pipe or electro-pneumatic—for freight
  - extended productivity—driver-only operation, distributed power, positive train management, and so on
  - a 30-tonne axle-load standard for all new main line construction
  - a holistic approach to improvements that offer joint benefits for multiple operators and track owners
  - low-cost, low-maintenance, minimal-delay single-line safeworking
  - automated electronic identification of rolling stock, with remote reading
  - performance standards replacing the command-and-control style
  - a consistent focus on learning and development and training of employees
- possible projects
  - freight clearances—minimum height and width to Association of American Railroads standards, with optimum double-stacking at 7.1 metres
  - axle loading—current ARTC goals (25 tonnes at 80 kilometres an hour; 21 tonnes heading towards 23 at 115 kilometres an hour) as minimum on main lines and for bulk hauls (at lower speeds) on branches
  - the inland route—Melbourne to Brisbane via Parkes and Dubbo
  - improved port access for rail
  - main line realignments suitable for running at ARTC maximum speeds continuously over long distances
  - a regional high-speed link to Toowoomba
  - maturity in rail project evaluation—on a comparable basis with road
  - advanced planning to 'plans in the drawer' stage

- external factors
  - national and state transport planning and funding
  - competition policy focused on *land* transport, not just rail
  - existing committed highway upgrades and bypasses
  - the Roads to Recovery Program—\$1.5 billion
  - fuel pricing and carbon credits
  - regional matters, particularly planning and integration of sectional issues—for example, transport, land use, sustainability, and development
  - greenhouse developments and environmental responsibility
  - road cost recovery from heavy trucking
  - transport-related crash trauma’s impact on health care costs
  - road congestion accelerating—road congestion pricing
  - major air pollution problems in cities
  - integration of urban planning—higher density living
  - increasing cost of maintenance as highways and main roads wear out
  - curfews on trucking in peak periods and at night in urban areas
  - port improvements to facilitate import and export efficiency
  - new and expanded resource developments—for example, the magnesium plant at Rockhampton, a second aluminium smelter at Gladstone, Portman iron ore in Western Australia, and mineral sands in Victoria and South Australia
  - supply-chain alliances replacing individual suppliers
  - an ageing but active population.

## The view from 2010

Our two scenarios—the Steady as We Go scenario and the Leadership and Vision scenario—are described here, as we look back from the year 2010.

### Steady as We Go

The decade since the start of the 21st century has seen the Australian rail scene change greatly, sometimes in unexpected ways.

Many of the recent changes have been an extension of longer term changes affecting the rail industry. The National Rail/FreightCorp sale in 2002 marked the end of the major rail privatisations. Of note is the fact that the buyers were for the first time both local and from the wider freight industry, rather than the offshore rail operators who had previously been the buyers at rail sales. The two new co-owners have had their difficulties, but they have managed to keep a firm grip on the inter-capital general freight market and have directed other freight onto their rail services to the extent that they can make a return on it.

The Alice Springs – Darwin railway was completed at the beginning of 2004, the project having been extremely well executed: it took just 21 months to lay 1420 kilometres of new track. Commercial operation of the railways has been somewhat problematic, but losses on general domestic freight have been fortuitously offset by some interesting mineral and regional traffics.

In Victoria, standardisation of much of the country network followed the imaginative 2000 plan, although it took longer than envisaged. Concurrently, Victoria implemented regional fast trains that have set a new standard for such rail services. Despite the failure of the public–private partnership proposals—a concept disadvantaged by the financial failure of the airport railways in Sydney and Brisbane—the new services have done remarkably well, a good measure being that the demand forecasts were exceeded on all four upgraded lines within two years of implementation. The results Perth and Brisbane achieved with their quality metropolitan services have been something of a beacon for the older established networks in Sydney and Melbourne. Attention to performance in both qualitative and quantitative terms has slowly moved the latter two systems away from their long-held ‘red rattler’ image. In Melbourne, and to some extent in Adelaide, coordination between the various public transport modes has been important, too. Removal of the ‘agro’ factor from the various automated ticketing systems has also played a part in image recovery.

Queensland still defies the rush to privatise and sell off government assets. QR continues solidly in the government camp and remains vertically integrated, confounding the pundits who saw the various privatisation and access issues in purely black-and-white terms. If nothing else, QR has demonstrated that factors other than these must be the determinants when it comes to financial health.

The pre-existing lines that form part of the inland route in New South Wales have progressively been improved to provide an adequate operating profile; apart from the 150 kilometres or so leading to the Queensland border, the upgrade was relatively easy. Some investment was needed, however, for a proper pattern of long and efficient crossing loops, for replacement of speed-restricted culverts and bridges, and for improvement of alignment through or bypassing of a number of station yards and other places where steam-driven rail

had been tolerated for far too long. The Brisbane–Toowoomba high-speed route is yet to be completed, but a new route has been laid out from the New South Wales border near Goondiwindi through Millmerran to Toowoomba.

After a protracted political game, national track access was finally established in a ‘one-stop shop’ arrangement, with a combination of ownership, leasing and management rights. In conjunction with this, a number of secondary and branch lines in New South Wales were placed under the oversight of the national body to obviate the problem of multiple track authorities being responsible for single regional rail movements. With the exception of the national network, the low number of infrastructure improvements remains a concern, although the much-delayed implementation of AusLink, the federal transport policy, may see some change to that. Resolution of the track access problem triggered the release of limited (but useful) federal funds for main line upgrading along the lines proposed in the 2001 Interstate Rail Network Audit, but until now there has been little else. Despite ARTC’s endeavours, it has been more a game of catch up with accrued maintenance rather than catch up with road.

The most important project has been completion of a freight link into Sydney from the south, allowing rail freight operations to continue full time, rather than having to work round the passenger peaks. In contrast, the absence of a similar facility to the north of the city has resulted in some costly losses, both to rail and to northern New South Wales communities. The ports at Newcastle and Brisbane continue to capture export business from northern and western New South Wales, even though this involves costly duplication of port resources. Passenger curfews now restrict freight operations between Newcastle and Sydney to barely 12 hours a day.

The National Code of Practice, which was adopted early in the decade, brought some sense to the plethora of rules and practices inherited from the former state railways. Although we still have some way to go, at least the worst excesses of individualism are behind us. Communications remain a problem but, with the unsubtle urging of the frequency licensing authority, this may one day become one of those ‘I remember when ...’ issues.

The supply of locomotive and rolling-stock has been erratic: the first half of the decade was notable for inter-company trading in recycled equipment, rather than the purchasing or leasing of new equipment. Hoarding or scrapping of surplus rolling stock early in the decade encouraged leasing companies to set up in Australia and, combined with some offshore manufacturing, they have been able to infuse some new equipment into the industry in more recent times. There is still a strong market for second-hand equipment where the low up-front cost is important for cash flow ahead of longer term lifecycle costs. The average age of the fleet has continued to grow, albeit more slowly in recent years. One small but important development was the CargoSprinter integral train, which, after a tentative start in 2002, has become a small high-utilisation fleet operating fast inter-city and inter-regional services, challenging the higher end of the trucking market.

New wagons have led to some improvement in load–tare ratios, but the wagons are few in number and the rest of the fleet is steadily ageing. The situation is similar with locomotives: there are a few contemporary-technology units around, mainly in the heavy bulk and long-distance inter-capital hauls, but a much larger number of old-technology units are still working. Driver-only operation is now more common, having been pioneered in the 1990s in Queensland and Victoria, while most of the rolling stock fleet is now identified with automated electronic identification, or AEI, tags. This latter development was one of the few

events that did not involve a ‘break of gauge’ stage along the way, being prompted by the National Rail’s early application of the technology. The search for a low-cost ‘in cab’ safe-working system has seen general adoption of the QR series 3 DTC (direct traffic control) system. For secondary and low-volume routes, the DTC system will be hard to better in terms of cost and simplicity.

On the political front, the ebb and flow of governments, both state and federal, has brought a few gains, and strategic rail planning is now evident in the more enlightened states. Highway investment, which was rampant at the beginning of the decade, was reduced as the national highway system approached an acceptable standard, only to be replaced by escalating road maintenance costs as the highways began to show their age. It is hoped that AusLink will bring some balance to land transport funding, but rail has not been adept at pressing for this in the years since the initiative was announced. The introduction of carbon credits, following the 2008 Jasper Accord, has the potential to promote the cause of rail—if the trading system is properly managed.

Although the rail lobby has gained a few teeth during the decade, it has not been able to match the ‘opposition’. Rail lobbying has continued to operate from Melbourne, rather than acknowledge the fact that real political relationships in the national arena are formed and nurtured in Canberra.

Probably the biggest disappointment of the decade has been rail’s failure to stem its loss of market share on the east coast routes: despite gains in tonnage, its Melbourne–Sydney–Brisbane market share has fallen to 8 per cent overall. Completion of rebuilding the north coast highway between Newcastle and the Gold Coast was an important factor in the loss of market share; in fact, continuation of moderate land-bridging volumes to Sydney was the only thing that saved the north coast line. Sydney is now recording lower than average economic growth compared with the country as a whole, a situation no doubt exacerbated by the trucking curfews that were introduced after the Pennant Hills riots and blockade of three years ago. The inland route, just 150 kilometres from its northern goal, has the potential to revive the fortunes of interstate rail between Queensland and the rest of the country. On the basis of the relatively successful access and operation model of the east–west corridor, which has been modified to accommodate the quite substantial regional traffic opportunities, it is expected that by 2020 interstate services operated over the new route will have taken up to 21 per cent of market share and be continuing to grow. The coastal corridors may have drifted into obscurity by then.

### **Key features**

The following are the key features of the Steady as We Go scenario:

- completion of existing projects and some new ones, but with disappointing results in some cases
- some new initiatives with good results but localised to individual companies or regions, or both
- relatively little influence over ‘big picture’ concerns such as government policy and rational transport funding
- the direction of rail’s future being largely determined *for* us, rather than *by* us

- little comprehension of an industry interest, as opposed to sectional and parochial interests
- continued erosion of market share on important routes and services.

## Leadership and Vision

Looking back on the decade to 2010, we can confidently say that the genesis of major structural change in Australian rail in the recent past was the late Lou Marks's keynote speech at a Railways of Australia conference in 1988. This conference seemed to hit the right note with the right people at the right time, and the end result was the formation of National Rail in 1992; from that came, among other things, the modernisation of employment in rail. Following this came outsourcing, track access, corporatisation then privatisation, and a host of other radical changes. But these changes were generally invisible to the public, so the politicians did little. At least in the public eye, rail continued to play the role of victim, promoting to a public that was largely uninterested an image of an industry poorly treated. Successive governments tended to evince interest in the things they perceived as mattering, which in land transport meant roads.

By early in the 21st century the structural shake-up of the industry was complete. The next big leap for the industry to come to terms with concerned taking control of its destiny—developing a vision and following it into the future. As keynote speaker Peter Ellyard said at a 2001 rail conference, 'Success goes to those who get to the future first ... You need a vision for rail. If you create a positive vision then people will find the money'.

It was a while before rail actually found its visionary leader. The 2005 recruitment of Ric Ganesh to head the Australian Freight Group was, it turned out, an inspired move. Further, the Australasian Railway Association's move from Melbourne to Canberra, and the engagement of the association's first truly politically skilled lobbyist, Tom DiMaggio, brought together the two most influential personalities the rail industry had seen for a long time.

Ric seemed to catch the imagination of the public, while at the same time igniting the passion of the rail industry. He took advantage of all he could and encouraged his people to go to the limit on everything that would help his company's fortunes. He didn't mind if people made honest mistakes, and he was far from risk averse. But he did dislike people who were 'all talk and no action'—non-achievers in his book. Wherever possible, he simply did the things that needed to be done, superficially ignoring government indifference to rail but in fact over time attracting quite some attention from the more informed on both sides of the parliament.

Commercial sustainability had just about been reached when Ric took over the Australian Freight Group, but within six months it became clear that the company's fortunes were on the rise—spectacularly. Aggressive in the marketplace, sensitive to people and aware of the rail industry as a whole, he had a rapid and telling impact on the rail agenda. Ric became a hero to a number of other rail executives and managers, who perhaps lacked his drive but were more than competent to be his lieutenants. Not that there was any formal linkage: it was just that one man's charisma and vision encouraged others into the fold of common industry interest. A large part of the rail industry ceased to see itself as being at the end of the political dole queue and began to believe in itself. Decisions were made. More importantly, well-judged risks were taken, and in most cases they have produced positive results.

For years the bigger questions of national and state transport policy, equity and competition continued to deflect the focus away from management of those things that rail could and ought to do for itself. Critical factors such as getting into the ‘supply chain’, presentation of quality service, creation of premium opportunities, investment in innovation, cooperative ventures and alliances, a continuing research and development capability, and particularly the overall health of the industry, had been left unattended. That is, until Ric arrived: the ultimate ‘can do’ person, he simply manoeuvred around the obstacles that seemed to be in his path. The barrier created by attitudes and ‘paper walls’ within the rail industry turned out to be partly illusory, but it was responsible for almost as much indecision and inaction as policy and political inertia. The amazing thing is that in recent times the politicians have started to take rail seriously and, more importantly, to genuinely interact with the rail industry to a greater extent than many thought possible. The other very significant outcome has been the creation of exciting futures in rail for smart young people: rail is gaining an image as ‘the place to work’.

But Tom’s role must not be overlooked: in the political arena he was almost as influential as Ric was in the rail industry arena. He quickly established his Canberra base, building bridges to both sides of the federal parliament and extending communication lines to the state Houses. Just as he was doing this, the great Medicare blow-out came to the top of the agenda. (Medical costs had been reined in by a number of measures in recent years, but in reality the problem was just being hidden—a ticking bomb for someone else to deal with at some future date. Now was the date.) Responding to the controversy, the government set up an urgent inquiry to identify aspects of health care costs that were controllable. And guess what? The inquiry found that road trauma and premature deaths from urban vehicle pollution were significant components of these controllable costs. Around 1700 fatalities, 20 000 hospitalisations and 60 000 cases requiring medical treatment were recorded each year as directly attributable to road crashes, and there was a similar number of cases of road-induced ‘air poisoning’. Tom convinced the inquiry that a community cost of well over \$30 billion was directly attributable to road use, and of this amount medical costs were a large component.

Tom was quick to respond, and in what seemed like no time—at least to railway people—he had placed the problems of road trauma, trucking trauma, asthma, particulate poisoning, greenhouse and environment, and a host of other road-related nasties, high on the agenda. The government had to do something.

A Land Transport Equity Act was enacted, greatly strengthening the earlier AusLink plan. At last there was a single funding source for national land transport, a common basis for evaluating projects across modes, and a requirement to account for trauma and environmental factors in every project appraisal. No longer was it a matter of roads competing among themselves for funds; now it was a multimodal approach. A side issue that arose from these changes was the redefinition of competition policy to deal with land transport rather than just rail, one consequence of which was the application of mass-distance charging for heavy trucks, starting in 2007. The government, with its newfound zeal, had felt sufficiently empowered to demand full cost recovery from heavy road vehicles, instead of letting them be cross-subsidised, as in the past.

Together, Ric and Tom brought new heart into the industry. Suddenly there was an outward focus—attention to the big questions, a reduction in internal divisiveness and squabbling. Some managers showed leadership qualities, displaying vision that had until then been smothered by an inward-looking industry and the dead hand of economic rationalism. Rail

organisations started to share resources much more freely; in some areas they found themselves actually cooperating on matters they once regarded as competitive. From a tentative start, traffic boomed, particularly in the competitive general freight area. East coast traffic soared and market share started to grow. Regional freight came back to rail—not in the ‘all stations and everything’ of long ago, but instead through efficient, centralised distribution systems in key regional locations. Rail had indeed linked into the supply chain and—with some assistance from the CargoSprinter fleet, which was now being manufactured locally—was able to tap into markets that only a few years earlier it would have fled.

The second half of the decade has seen some quite significant turnarounds, which, if they can be maintained, augur well for the future. Assisted by track straightening, long-haul freight has shown an encouraging upward trend, sufficient to confound the periodic trend patterns so beloved of the Bureau of Transport and Regional Economics. Importantly, rail’s market share on the east coast continues to grow. The trucking industry’s loud cries have deflected neither rail nor the political focus. Shorter haul regional services have also had something of a revival, aided to some extent by cross-border competition on rail in southern and northern New South Wales. Now that the demon of ‘shunting costs’ has finally been cast off, the railways are willing to look at every opportunity purely on the basis of the potential contribution to overall wellbeing. Ric’s ‘no fear’ attitude to the competition marked a significant change from the neurotic, rather immature attitude that previously pervaded the industry.

Victoria’s gauge conversion has been a great success. The commercially aggressive Freight Australia had been able to quickly open up a number of new cross-border routes, highlighting how restrictive the break of gauge had been. Now, with the Transport Equity Act as an additional incentive, further lines have been nominated for conversion, which will ultimately leave a core of electrified and short-haul regional routes as the only ones awaiting standardisation. The somewhat unexpected conversion of the Adelaide metropolitan and remaining country broad-gauge routes to standard gauge in 2006 removed the last of that gauge from South Australia—apart from a couple of isolated examples in preservation.

Perhaps one of the most important changes has been the recognition that effective competition on land depends to a large degree on the existence of competitive infrastructure. Whereas for almost all the 20th century little was done to improve infrastructure capability, the last few years have seen a reversal. Implementation of a fully functional track-access operator model that is equitable and sends the right pricing signals has been the precursor to a number of important new infrastructure investments. The wonderful thing about this is that it was done entirely in-house by the rail industry: it was a created, rather than an imposed, solution. At the same time, operators gained a heightened awareness of the cost of rolling stock, the cost of stopping and slowing for other than revenue reasons, and the real value of high resource use and have been willing to contribute to projects that will work for them in this regard.

But it was not all smooth sailing. The network’s capacity to handle the initial rapid build-up of traffic was limited by the condition of the infrastructure. It was not in a good position to cope with sudden large increases in train numbers, and Sydney was still beset by curfew restrictions, despite a start being made on the southern freight route. It was not difficult to justify the funding: after all, the starvation of rail over many decades had left a huge quality deficit when compared with road. It was more a matter of the sheer magnitude of the task. In New South Wales the southern Sydney freight access received top priority, while further

south a number of major realignments are under way; this will not only expedite freight trains but also provide the basis for the east coast high-speed tilt train network.

Plans were rapidly formulated—based on the multiplicity of reports that emerged from the storerooms—for judicious realignment of parts of the southern main line, making sure that the benefits could progressively be achieved as sections of the project were completed. On the northern route, some track amplification with a contractual ‘guarantee’ for freight paths has allowed a halving of curfew periods. The current intention is to proceed with the Fassifern–Hexham–Stroud line, which will allow a 60-minute time reduction for through trains while solving some of the coal capacity problems nearer Newcastle. Even without attending to any of the alignment problems between Stroud Road and Brisbane, it turned out to be possible to reduce transit times by three hours. Since then, a number of ‘low cost – big result’ realignments have been completed and several more are on the drawing board. In some respects the New South Wales north coast line upgrade is emulating the experience of its narrow-gauge counterpart in Queensland 10 years earlier.

On the western route between Cootamundra and Broken Hill, the Australian Rail Track Corporation had already started installing long loops, configured like those on the Nullarbor, with self-restoring switches. This program was accelerated and was virtually complete by the end of 2004. More importantly, the Cootamundra – Crystal Brook route was cleared for full-height double-stack with minimal effort. Work then moved south, and the relatively few structures towards Albury and eventually Mangalore were fixed to provide double-stack to within 110 kilometres of Melbourne. Coincidentally, Mangalore airport had an extended siding built, laying the groundwork for what was to become a multimodal freight hub for high-value exports. During the work to ‘close’ the old broad-gauge line between Seymour and Albury, ARTC realised that parts of that line had fewer overhead impediments than the standard-gauge line, allowing provision of double-stack capability at reduced cost. Since then, the Seymour line has been completely standardised and structures cleared for double-stack to Somerton. Extension into the port precinct—now of course expanded to take in South Dynon and Dynon rail—awaits completion of the western Melbourne rail access corridor and some remaining works under the numerous freeway bridges south of Somerton.

On the main line between Melbourne and Adelaide two difficult bypass projects were completed just last year, removing longstanding bottlenecks at Newport and North Geelong. The quantity of exports attracted from southern New South Wales had exceeded expectations, and relief quickly became a necessity at these locations.

Main line upgrading has continued in Queensland, with a series of local improvements on the north coast line following completion of the Townsville track project. (The section to Landsborough was done as part of the Sunshine Coast project.) ‘Branch’ lines have continued to appear at regular intervals, to service the growing number of new mineral developments: coal traffic has plateaued since about 2007 as a result of greenhouse accords, but the new mineral developments are offering many opportunities. Extension of the Mt Isa line to various mining sites has reached a point where continuation to Tennant Creek is realistic. All the new work has of course been done with eventual standardisation in mind.

The Alice Springs – Darwin line was duly completed in 2004, but it has not attracted the much talked of but unbankable land-bridge traffic from the south. What it has done, though, is attract a number of new mining ventures that find the port the only viable option for semi-processed export. One interesting development is the port-owned and -operated plant that

handles on a 'community' basis processing from what would otherwise be unviable small mines in the Northern Territory.

The east–west route between Adelaide and Perth has not needed much improvement. Completion of the Kalgoorlie area concrete sleeper project and the Kalgoorlie bypass (the latter funded by mining interests) has been the main achievement. After all, how much do you need to spend when you already have 80 per cent of market share on rail?

The inland route has been a huge success since its completion in 2008. It is showing very substantial growth of traffic on the long hauls between Melbourne and Queensland (north and south): a 40 per cent market share is expected this year. This route has also facilitated a number of other ground-breaking new traffics, among the more notable being the contract with Maules Creek open-cut at Boggabri for 1.5 million tonnes of coal a year over the 1700-kilometre route to Port Augusta. This traffic, which is worked with just two train consists, is the first long-haul coal in the country. A useful byproduct of the inland route is the way that cotton from Warren and Narrabri now goes to Melbourne, Sydney or Brisbane ports interchangeably, to suit shipping programs. Double-stacking is available on the route north of Somerton, with direct access to Melbourne expected in a year or so.

Since obtaining the ARTC management contract for country lines, New South Wales has been able to concentrate on managing the suburban and inter-urban networks and, with fewer distractions, has started getting the results that eluded it for so long. Simple solutions—for example, running the airport trains as a self-contained service with short, frequent, baggage-friendly trains, and improving train running patterns on the rest of the network—have produced excellent results. Further, integration of Sydney's trains, ferries and buses has allowed a quantum leap in transport accessibility and relieved some of the burden on freeways. Sydney also came to realise that closing lines for up to six weeks for track upgrading is no way to improve demand. Track possessions, which were happening almost every weekend, were virtually outlawed: only the most difficult jobs were allowed to close lines for extended periods. In compensation, night-time services were rearranged to allow track maintenance without unduly disrupting services.

Suburban services in Melbourne have greatly improved since the introduction of new trains and, after a prolonged period, the ticketing system has settled down. Electrification has been extended to Sunbury and Craigieburn, and the diesel rolling stock released from these services has allowed for improved frequencies on non-electric lines elsewhere.

The narrow-gauge QR system has gone from strength to strength. The inter-urban area around Brisbane has expanded, with high-speed lines from the Sunshine Coast and Toowoomba into central Brisbane. Excellent connections are provided to the developing east coast high-speed tilt train network to Sydney and beyond. Traffic on the Robina–Coolongatta line developed to the point where capacity in from Bethania became a real problem: the solution was a new 'cross-country' high-speed route to near Corinda, from where the four-track main line had capacity to provide good access into central Brisbane.

By 2002 Adelaide's suburban services had declined almost to the point of irrelevance: passenger revenue had declined to such an extent that the service's survival was in jeopardy. Fortunately, as had happened in Victoria in 1981, a decision was made to try to make rail actually work. Services were upgraded, to run at 15-minute intervals all day, and rolling stock was cleaned up. The surprise decision to convert the system to standard gauge paid off: well over \$1 million annually in freight access fees has been gained, and there is now ready access

to new routes and serviceable railcars to meet changes in demography. Conversion to standard gauge has also allowed the Glenelg tram to be reintegrated into the rail network, with good results.

Perth provides a couple of positive examples: its main north–south route runs straight under the central business district, and the Mandurah–Yanchep line is a model of its kind, mainly in terms of freeway medians with large, well-designed interchanges at 3- to 5-kilometre intervals, allowing trains to run at up to 130 kilometres an hour between stops. On the other hand, the older metropolitan lines continue to display their links with the past, with frequent stops at local stations. But, whatever the mix, Perth has an excellent service and has shown remarkable growth—from less than 10 million passenger journeys in 1990 to 83 million today.

The industry has risen to the challenge and, in cooperation with the ground-breaking work of the Rail Cooperative Research Centre, is providing innovative products that are proving to be an export success. An example is the proposal, emanating from a group of lease and niche operators, that ARTC adopt AAR-standard rolling stock outlines as the minimum for all clearances on freight lines. This has now been in progress for five years and, although we have a long way to go, there are quite a number of routes where US rolling stock can now operate; in fact, however, most ‘new-outline’ rolling stock is supplied locally using creative home-grown technology. Another example is the widespread use of twin-pipe braking on long and heavy trains. New South Wales pioneered this in its coal business, but it is now fairly widespread in bulk traffic and unit intermodal trains. Electro-pneumatic braking is expected to be introduced soon on the new 110-tonne coal wagons in Queensland.

The Rail Cooperative Research Centre—a logical successor to the short-lived ARRDO—has been at the forefront of technical and system development: there is increasing technology cross-over into other industries and its work has underpinned a growing export business.

Despite these wonderful successes, though, there have been setbacks. Some states have been quite slow to enact complementary legislation; this means they have penalised themselves because transport funding has been withheld as a result. Further, in some areas the rail industry has not risen to the occasion quickly enough: there is one case where two operators were sold up because they failed to adapt. And in some cases consultants have had to change their emphasis—looking at real projects and turning away from studies of the ‘tell me the answer and I will find the problem’ kind.

It has taken time to instil vision, leadership and imagination in the various rail organisations, but these elements have proved crucial to the revival of rail.

Beyond all this, the transformation of the Australian rail industry has produced another national benefit—an industry exporting ideas, processes, techniques, even policy, and that is the envy of many other nations. Having thrown off its colonial shackles, Australia has been able to develop unique transport solutions that are eminently transferable ... and it is happening. These days, productive and satisfying careers in the rail industry are not limited to Australia: they extend to a growing number of overseas destinations.

Ric and Tom have moved on now, glad and grateful to have been part of an industry renaissance. They certainly made their mark on the Australian rail industry. It is up to us now to keep the vision alive.

### **Key features**

The following are the key features of the Leadership and Vision scenario:

- a change of direction—propelled by the industry itself
- a culture change—from risk averse to ‘can do’
- leadership as a primary management criterion
- nurturing of people and an emphasis on ‘people development’
- surmounting of self-imposed and illusory constraints
- a more commercial approach to business—in line with the ‘can do’ ethic
- rail performing more of the national transport task
- attention to competitive infrastructure
- recognition of the high value of quality service
- political awareness and consistent advocacy
- good opportunism—picking up on events and turning them to advantage
- significant infrastructure renewals and improvements
- an outflow of culture, ideas and attitudes
- exportable ideas, processes and techniques.

## Conclusions

Rail in Australia is at the crossroads: stark choices confront us. We can continue as we have been, making limited technical and commercial advances but generally becoming increasingly irrelevant in industrial and political terms, or we can take charge of our own future.

If we adopt the Steady as We Go scenario, indecision and inaction, on the part of both the rail industry and government, will continue, and good opportunities will go begging. AusLink will be little influenced by rail, and institutionalised arrangements will change very little. Urban transport decay and pollution will slowly choke the cities. Rail freight, other than bulk hauls, will decline on the east coast networks. This gloomy scenario is all about the impact of allowing the transport agenda to be determined by others. It is the lazy route to the future. Our industry will continue to present a fractured and sometimes dysfunctional appearance to society, which in the main will no longer see rail as a part of mainstream transport in Australia.

The alternative—the Leadership and Vision scenario—allows rail to start taking control of its own future, not just in the narrow sense but across the land transport domain. There are a number of visionaries in the industry, and there is some evidence that they can be successful. The Melbourne–Albury standard-gauge line, where speeds and axle loads that were once unheard of are running on track that was supposed to be life-expired 20 years ago, is a case in point. The efficiency of that corridor has been improved at a cost that will encourage further such development. In New South Wales numerous secondary main lines have the same track structure but are severely restricted in what they are allowed to do. There are many examples of expensive and elaborate signalling systems that have actually slowed trains down, at a time when rail is struggling to compete with vastly improved roads. Undue political focus on urban passenger *trains* has in some cases resulted in degradation of both freight and passenger *services* in city areas. We have allowed all these things to happen because our industry lacks vision and leadership.

We do have people with leadership skills, but we must provide the right environment and support for them, so that they and their peers can flourish. Without that fundamental change, it will simply be a matter of time before rail becomes a backwater in the Australian transport scene.

In 2001 ACIL Consulting noted, ‘If the rail business could grow there would be a virtuous circle; revenues would grow faster than costs ... This would lead to profits that could be reinvested in further upgrades in service improvements. Pressures would be reduced on roads and on the environment’.

As acting Prime Minister John Anderson said when announcing AusLink on 21 May 2002, ‘We cannot go on this way. We have to make changes now’.

As an industry we must take charge of creating that ‘virtuous circle’, and to do this we have to adopt a different style of governance for the industry. We must encourage, support and, in fact, demand visionary leadership with a strong ‘can do’ ethic. We must rise above the apathy that has characterised the past.

We *can* be the land transport industry of the 21st century. We *must* be.

## Appendix A Australia's land transport tasks

Tables A.1 and A.2 show Australia's road and rail transport tasks for the period 1980–81 to 2000–01 and projections for 2010–11, assuming no change to the status quo.

**Table A.1 Australia's land passenger tasks, 1980–81 to 2010–11**

Mode	1980–81	1990–91	2000–21	2010–11
Urban road	99.0	139.0	167.0	197.0
<i>Total road</i>	<i>157.0</i>	<i>216.0</i>	<i>256.0</i>	<i>298.0</i>
Urban rail	6.3	7.5	8.2	9.9
<i>Total rail</i>	<i>9.3</i>	<i>9.9</i>	<i>10.2</i>	<i>12.0</i>

Notes: Figures have been rounded.  
Road passenger-kilometres includes car and bus.

Source: Bureau of Transport and Regional Economics 2002, *Greenhouse Emissions from Transport: Australian trends to 2020*, Report no. 107, BTRE, Canberra.

**Table A.2 Australia's land freight tasks, 1980–81 to 2010–11**

Mode	1980–81	1990–91	2000–21	2010–11
Urban road	18	29	44	59
<i>Total road</i>	<i>53</i>	<i>87</i>	<i>143</i>	<i>215</i>
Rail	66	91	134	176

Note: Figures have been rounded.

Source: Bureau of Transport and Regional Economics 2002, *Greenhouse Emissions from Transport: Australian trends to 2020*, Report no. 107, BTRE, Canberra.

Australia's inter-capital non-bulk land freight market was estimated by the Bureau of Transport Economics at about 40.6 billion tonne-kilometres in 1994–95, of which 26.0btkm was held by road and 14.6btkm held by rail. The same report also noted that in 1979–80 road and rail had about equal shares (approximately 11btkm each); additionally, on the basis of recent trends, the road share would continue to grow at the expense of rail, and by 2019–20 road would have grown to 90btkm and rail would have grown to only 26btkm.

### Vision

The Task Force's vision for rail in Australia puts forward two basic scenarios to 2010—Steady as We Go and Leadership and Vision.

Under the Steady as We Go scenario, by the year 2010–11, as indicated by the Bureau of Transport and Regional Economics projections, rail has modest growth for urban passenger transport, limited growth for inter-capital non-bulk freight, and virtually no growth for non-urban passenger transport. As a result, the major cities will be choked with cars and the interstate highways will carry many more heavy trucks.

Unless rail performs much more of the nation's land transport task—passenger and freight—there will be no relief from road congestion and there will be increased road trauma and air pollution from cars and trucks.

We need Leadership and Vision to achieve the extension of some urban rail systems and a major upgrade of inter-city track in eastern Australia.

## Appendix B      The report card

In formulating the rail track report card, the Task Force has used the ratings in the 2001 infrastructure report prepared for the Institution of Engineers, Australia, and its alliance partners, as follows:

- A      Very good—fit for its current and anticipated purpose
- B      Good—minor changes required
- C      Adequate—major changes required
- D      Poor—critical changes required
- F      Inadequate—inadequate for current and future needs.

The 2001 report gave rail an overall rating of D-. It noted, however, that the rail sector varies—from world best practice with the Pilbara iron ore trains (A+) to the Melbourne–Sydney–Brisbane main line track (F), with poor track coordination, steam-age alignments and inadequate signalling and communication systems.

In any formulation of a further rail track report card, the Task Force suggests inclusion of the following extremes for rail track in Australia:

- major urban rail systems
  - Perth, A-. Past and committed expansion will deliver a world-class system.
  - Sydney, C-. Although the track performed well during the 2000 Olympics, track upgrades have not kept pace with passenger growth, and signal upgrades (now under way) are needed.
  - Adelaide, D. Without electrification, this system risks obsolescence.
- the defined interstate rail network (main sections) in addition to Melbourne–Sydney–Brisbane, F. The network is in need of rehabilitation.
- Adelaide–Perth, B. Track is good but does not meet world-class speed–weight standards.
- selected other lines in addition to Pilbara iron ore lines (A+)
  - central Queensland coal lines, A-
  - Hunter Valley coal lines, B
  - Brisbane–Cairns, C+. The Caboolture–Landsborough duplication is overdue and other track straightening is needed post MLU
  - Grandchester–Gowrie, D. Track is in need of replacement.

## Further reading

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## About the RTSA

The Railway Technical Society of Australasia promotes the science and practice of railway engineering and related technology and is a technical society of the Institution of Engineers, Australia. Membership of the society is normally open to all with an interest in rail. Details can be obtained from the society's web site <[www.rtsa.com.au](http://www.rtsa.com.au)> and by writing to the RTSA, PO Box E303, Kingston ACT 2604.

The society publishes technical papers, arranges study tours, and is organising the Conference on Railway Engineering to be held at Darwin in June 2004. In addition, it supports education, research, and a better deal from governments for the rail industry. Networking is also provided through regular meetings of regional chapters.