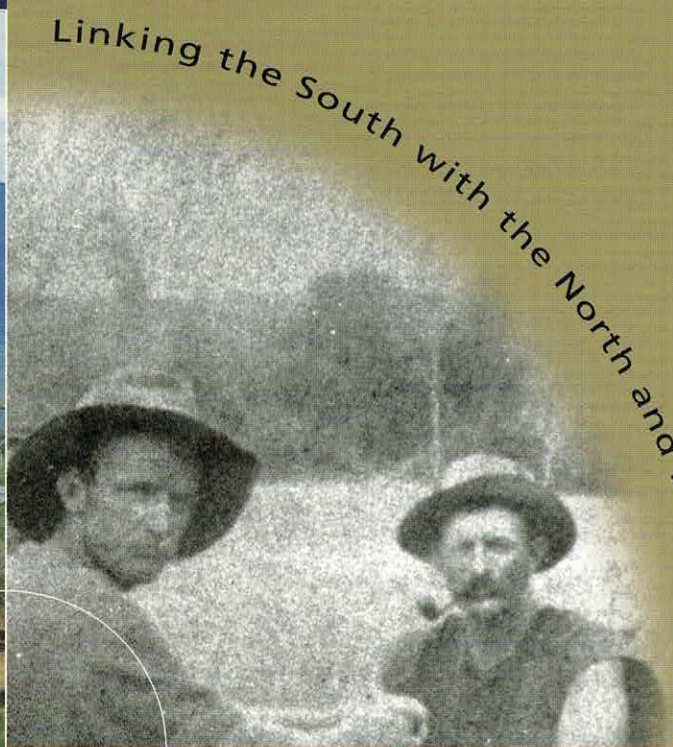
AUSTRALIA'S

NORTHERN TERRITORY

PORT RAIL LINK

Linking the South with the North and beyond...



Port rail Link

Rail-Port

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Cover photo: Men seated on railway track (Mayse Young collection, courtesy NT Library)
Construction worker on the Katherine Bridge, 1920s (Rodgers Collection, courtesy NT Library)

Not just a railway

In these days of solar cars, catamarans and electric trains, it is hard to appreciate that the advent of steam engines in the 19th century was as evolutionary for its time as the Internet has been to communications in the 20th century.

After Stephenson's *Locomotion* was introduced to the Stockton & Darlington line in 1825, railways spread like tropical vines across the globe, bringing with them the mail, freight, new settlers and new economies.

The colony of South Australia was established in 1836, taking control of the Northern Territory in 1863 from New South Wales. South Australian pastoralists, politicians and adventurers alike espoused the benefits that would flow from the link across the desert to tropical Port Darwin, but for decades they grappled with the impossibility of a small colony financing such a grand scheme.

Progress was agonisingly slow. A line begun in 1878 in Port Augusta did not reach Alice Springs until 1929. A northern line from Port Darwin reached Pine Creek in 1889, Katherine in 1926 and Birdum in 1929 but was closed in 1976.

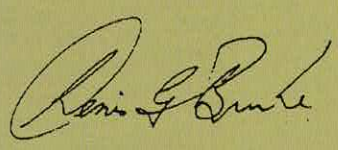
Since Self-Government in 1978, the Territory has continued to advocate a transcontinental railway, finally joining again with South Australia to bring this 140-year old dream to fruition. In 1997, the two Governments established the AustralAsia Railway Corporation to manage the tender process. In June 1999, the Asia Pacific Transport Consortium was selected as the preferred bidder to build and operate the railway. In October, 1999 government funding of $480 million was finalised for the $1.2 billion project ($165 million from the Commonwealth Government's Federation Fund, $165 million from the Northern Territory, and $150 million from South Australia).

When the first freight train arrives in 2003, Darwin will be the last capital city in Australia linked to the national railway system. But the AustralAsia Railway means far more: it will complete a modern transport system providing more competitive freight, foster social and economic development in the region, and develop new north-south Australian trade patterns between Asia and the south-east of Australia.

The railway terminus at the modern natural harbour of East Arm Port will see freight containers moved seamlessly between ship, road, rail and air. This new AustralAsia Trade Route is what our forebears visualised when they first talked of a transcontinental railway taking cattle and horses to India, Siam and China. Then, as now, Darwin was the only Australian capital city in Asia: it is closer to Jakarta than Sydney and mid-way between Melbourne and Manila, providing a logical gateway for freight to the rest of Australia.

So we see the railway as cementing our place in the region, boosting our economy and industrial capacity, and building on the directions outlined both in our 1996 strategic plan *Darwin 2010 - The Multi-Modal Transport and Logistics Hub* and the Northern Territory Government's 1999 blueprint for social and economic development, *Foundations for Our Future.* The railway and port developments complete the last link in our future directions. They will boost our growing mining, oil and gas exploration, defence, agricultural and tourism industries, as well as supporting our role as a regional supply and service centre,

This booklet is a story of the railway, its trials and tribulations, the hardships of its pioneers, and a happy ending to a 140-year old dream: the final link in the shape of a 1410 kilometre line from Alice Springs to Darwin.



DENIS BURKE
CHIEF MINISTER

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Introduction

In 2003, a freight train will cross the embankment to Darwin's new East Arm Port, becoming the last link in a transport system that has eluded the Northern Territory for 140 years.

Darwin finally will be linked to the Australian railway network, changing the shape of transport in the Northern Territory and creating a new trade route between Asia and South-Eastern Australia.

In many ways, this last link marks the end of the Territory's 'frontier' image as we move into a forward-looking era that builds on our strong economic development and strategic location as part of Asia.

However, the past is never truly left behind. In moving so fast into the future, it is timely to engage in a little nostalgia and pay tribute to the sacrifices of our forebears who got us to this point in our history.

People on the East Coast might take their trains for granted. In the Territory, the 140-year battle for a transcontinental railway is part of the rich tapestry of isolation, individualism and perseverence that has made the Territory unique. The railway is part of our heritage, our culture and the collective consciousness of Territorians.

Bringing the concept of a transcontinental railway to fruition spans the pioneering era of Central Australia; the first tentative settlement of the tropical "Northern Territory of South Australia"; passionate South Australian Parliamentary debates in the 1870s and 80s about paying for the railway; men working in isolated and harsh conditions to build it; the passing of control of the Territory from South Australia to the Commonwealth in 1911; our strategic defence role in the Second World War; demonstrations at the closing of the northern line in 1976; cynicism by Territorians at the number of times they have heard 'that the railway will be built'; the unswerving commitment of the Northern Territory Government since Self-Government in 1978 to complete this elusive 'last link'; and, at last, success!

In an era where we it take for granted that we can pick up a phone, hop on a plane, buy daily fresh fruit and vegetables in most regional centres, and read news as it happens on the Internet, it pays to recall that life wasn't always this easy. We are proud of our pioneers. They were men and women who were not easily thwarted, despite being out of sight and mind of the big cities, despite progress sometimes passing them by as they toiled to seal roads, build railway lines through desert and tropical floods, establish remote pastoral properties, and ensure the social and economic development of our region.

This brochure is part nostalgia, part "Lest We Forget", part acknowledgment of how long ago the foundation stone of this great project was laid. It is dedicated to the memory of those thousands of anonymous surveyors, engineers, fettlers, labourers and train drivers who toiled hundreds or thousands of miles from home comforts to connect Darwin to the world, only to have the line stop dead, like a thousand mile moat without a drawbridge across the centre of Australia.

Not only is our history fascinating but, in many ways, the 'last link' brings us full circle and reminds us just how far we have come in the past 140 years, when men of vision first imagined a transcontinental line across Australia.

Rumbalara camp, 1929 (*Davis collection, courtesy NT Archives*)

The first railways in the world

It is hard to imagine the social and industrial change ushered in by the 19th century 'Golden Era of Steam'. Trains replaced uncomfortable, expensive and time-consuming trips by camel, horse and bullock wagon, stage coach, ship and even dog sled, allowing people to travel for pleasure and live away from their work for the first time. Trains carried the mail, fish to London, cattle to port and troops to war. Trains even led to standardised time! In England, time between towns could vary by up to 14 minutes. The new telegraph network, usually located at train stations, allowed English towns to keep to 'train time', while the first trains from Darwin to Pine Creek ran to Overland Telegraph time.

Trains were built in the 14th century to cart material from European mines and connect mines with quays. They were drawn by horses or people (including women and children).

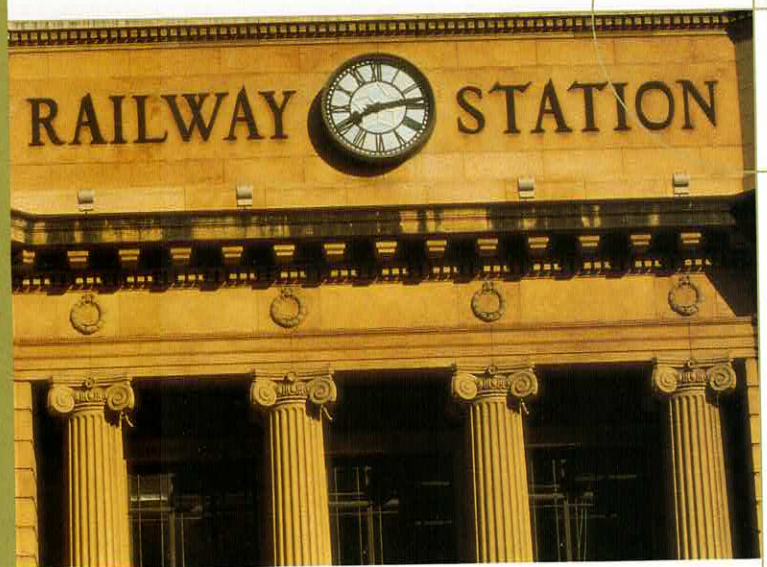
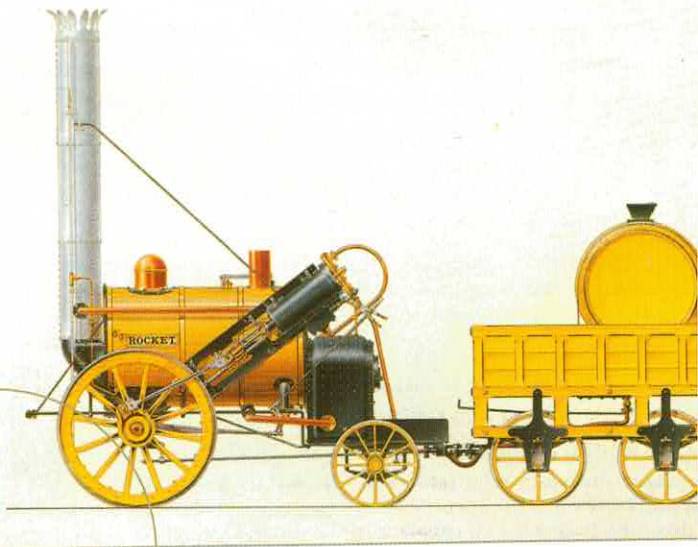


Photo courtesy *South Australian Tourism Commission*

The first public goods train was the Surrey Iron Railway Co, a horse-drawn service which opened in 1803 and ran between Croydon and Wordsworth for 51 years. The first fare-paying passenger line was the Oystermouth Railway in Wales, worked by horses and opened in 1806. It was later called the Swansea and Mumbles Railway, converted to steam then electricity, and closed only in 1960.

However, it was the Industrial Revolution that brought railways into their own. Iron and steel were plentiful, and railways were built using cast iron rails and flanged iron wheels.



Stephenson's *Rocket*, by Geoffrey Wheeler

The first steam engine, George Stephenson's famous *Locomotion*, was little more than a boiler on four wheels. It was built in 1825 for £500 and operated on the Stockton to Darlington line in the north of England. It was replaced by the *Rocket* in 1829.

Within decades railways had spread across the world and English factories and foundries were turning out rail and rolling stock for export.

The first rail journey in Australia was an 11-kilometre horse-drawn tram between Goolwa and Port Elliott in South Australia, which opened in 1854. In the same year the first steam train ran three kilometres from Melbourne to Port Melbourne, followed shortly afterwards by a 23-kilometre line from Sydney to Parramatta. South Australia opened a 13-kilometre line to Adelaide in 1856 and by 1860 had a line to the Kapunda copper mine.

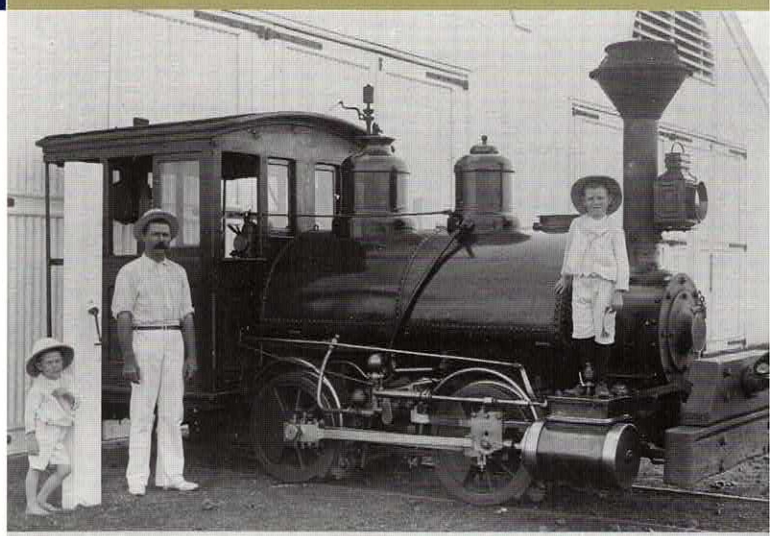
In 1855, the first NSW Railway Governor spoke of the time "when the whole country would be covered with a network of railways... to help develop the resources of the country and increase the value of the vast Territory now lying waste." By 1861 there were 390 kilometres of line in Australia, by 1871 there were 1657 kilometres, and by 1881 there were 6456 kilometres in six colonies.

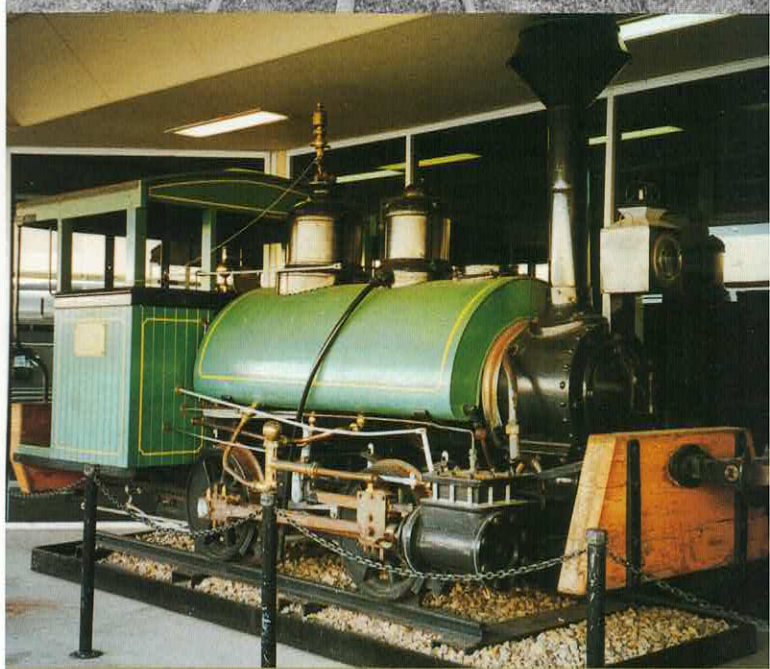
In countries such as Canada and America, railway lines ran from coast to coast, linked isolated towns, fostered settlement, and were regarded as instruments of nation-building. In Australia, however, 'railway mania' was parochial and uncoordinated. Rather than linking isolated towns and seaboards, railway lines were built to link ports with local hinterlands, not city with city. Each colony jealously developed autonomous economies and railway systems, with different gauges and little thought of transcontinental travel. It was to be another 100 years before gauges on the national rail network were standardised.

Gradually, the era of steam passed. Although the ready availability of coal meant steam engines lasted for over 100 years, they were regarded as dirty, inefficient in their use of fuel, and the need for water boilers created supply problems. In the 1950s, steam was replaced by diesel.

These days, electric trains have become common, especially for services in built-up areas. But around the world, people still love their steam engines and museums such as the Ghan Preservation Society in Alice Springs have lovingly restored old trains as tourist attractions.

The Territory's first engine, the *Sandfly*, a Baldwin shunter built in Philadelphia in 1886, worked in Darwin for 60 years. The restored shunter is now on the Keswick station platform in Adelaide where passengers embark on the Ghan passenger service for Alice Springs.



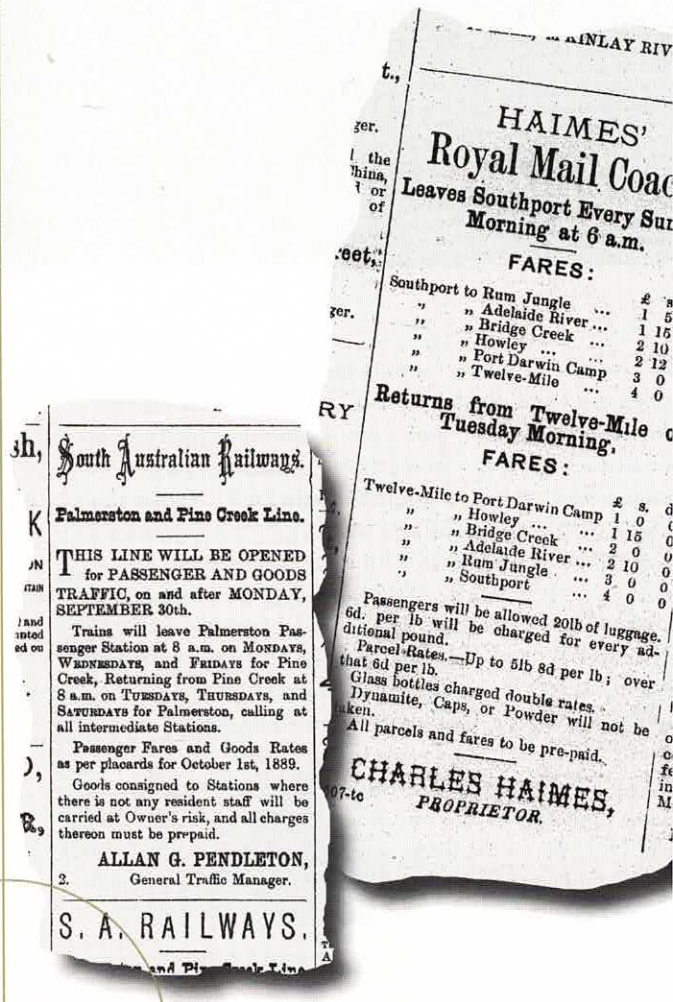


Top: The Territory's first locomotive, a shunter called the *Sandfly*, at 2 1/2 mile railway workshop. (*Greenwood/Gilstrom Collection, Album 280, National Library of Australia*)
Middle: The *Sandfly* is derailed after hitting a cow (*Greenwood/Gilstrom Collection, Album 280, National Library of Australia*)
Bottom: The *Sandfly* today at Keswick railway station platform in Adelaide

Early Territory transport

When Australia's remote inland was settled, there were no trains to carry passengers and freight. Early explorers battled across the continent by foot, horseback or camel, many dying of thirst and starvation. The first settlers in Port Darwin faced an uncomfortable 5025 mile trip by steamer, running the gauntlet of reefs and storms off the Queensland and Victorian coasts.

Once they reached Port Darwin, adventurers and miners alike struggled inland on foot. Those with a little money could take a boat to the other side of the harbour to meet Haimes' Royal Mail Coach, which left Southport at 6 am on Sundays. However, the cost of taking freight across to the Southport jetty was twice the cost of bringing it from Adelaide and bullock wagons to the Pine Creek gold fields could take weeks in the Wet season. The flood of mostly Chinese miners arriving on the Territory gold fields in the 1870s couldn't afford the fares and generally carried provisions on their backs.



HAIMES'
Royal Mail Coac
Leaves Southport Every Su
Morning at 6 a.m.

FARES:

	£
Southport to Rum Jungle ...	
" " Adelaide River ...	1 5
" " Bridge Creek ...	1 15
" " Howley ...	2 10
" " Port Darwin Camp	2 12
" " Twelve-Mile ...	3 0
	4 0

Returns from Twelve-Mile
Tuesday Morning.

FARES:

	£ s.
Twelve-Mile to Port Darwin Camp	1 0
" " Howley ...	1 15
" " Bridge Creek ...	2 0
" " Adelaide River ...	2 10
" " Rum Jungle ...	3 0
" " Southport ...	4 0

Passengers will be allowed 20lb of luggage. 6d. per lb will be charged for every additional pound.
Parcel Rates.—Up to 5lb 8d per lb; over that 6d per lb.
Glass bottles charged double rates.
Dynamite, Caps, or Powder will not be taken.
All parcels and fares to be pre-paid.

CHARLES HAIMES,
PROPRIETOR.

South Australian Railways.

Palmerston and Pine Creek Line.

THIS LINE WILL BE OPENED for PASSENGER AND GOODS TRAFFIC, on and after MONDAY, SEPTEMBER 30th.

Trains will leave Palmerston Passenger Station at 8 a.m. on MONDAYS, WEDNESDAYS, and FRIDAYS for Pine Creek, Returning from Pine Creek at 8 a.m. on TUESDAYS, THURSDAYS, and SATURDAYS for Palmerston, calling at all intermediate Stations.

Passenger Fares and Goods Rates as per placards for October 1st, 1889.

Goods consigned to Stations where there is not any resident staff will be carried at Owner's risk, and all charges thereon must be prepaid.

ALLAN G. PENDLETON,
General Traffic Manager.

S. A. RAILWAYS.

NT Times and Gazette.

Horse drawn vehicles carrying ore in the Territory (*E.S Brady Collection, National Library of Australia*)

One of the Territory's first settlers, Harriet Daly, arrived in 1870 with her father, Bloomfield Douglas, the first Government Resident in Darwin. She paints a vivid picture of early Palmerston, as Darwin was then called.

After a three-month voyage on the *Gulnare*, their furniture following in a barque, the Douglas family was eagerly greeted by earlier settlers hungry for Adelaide gossip. They waited another three months for a ship to bring letters, books and supplies. Mrs Daly talks of the family sitting up all night to read 'sacks' of newspapers after a later shipment: "Can it be credited that the whole Franco-Prussian War had been fought, and the deadly struggle over, before we had even heard of there being a prospect of war?" she exclaims.

In 1872 the Overland Telegraph line was built between Darwin and Adelaide, connecting Australia with the rest of the world. This provided a major boost for farmers who, for the first time, could check daily wool and wheat prices on the London market instead of waiting months for the mail and European papers.

Building the line meant 15,000 telegraph poles across the continent. But first the telegraph teams had to land! Mrs Daly describes their arrival:

All the cargo had to be unloaded, and this was no easy matter, for there was no jetty, even of the rudest description, at which a boat, let alone a ship, could lie. The horses were landed first - hoisted in slings and lowered over the ship's side, and when once in the water, they were released and swam to land. Drays were floated ashore, their wheels following them in a boat, and a large telegraph camp was formed on the tableland overhead.

The telegraph teams then had to push inland in country described by Mrs Daly as:

"... destitute, not only of any road, but absolutely devoid of any cleared track. As the line was surveyed - a sufficient length being first chained by a surveyor, who was followed by axemen - trees had to be felled and a certain width maintained, which was specified in the contract, for drays to follow... Everything for the use of the construction party had to be taken on the drays, for they were going into an absolutely desolate country, containing nothing that would sustain human life except the yams used by the natives.

During the Wet, travel became impossible, with horses having to pull drays "through a perfect quagmire of mud".

The story was similar for those travelling into the interior. Dorris Blackwell, whose father Thomas Bradshaw was one of the first telegraph masters in Alice Springs, talks of her first trip in 1899:

After reaching Terowie, about a hundred and fifty miles north of Adelaide, we were put aboard the narrow-gauge 'Ghan and remained in the same reserved carriage until Oodnadatta, where we arrived three days later...

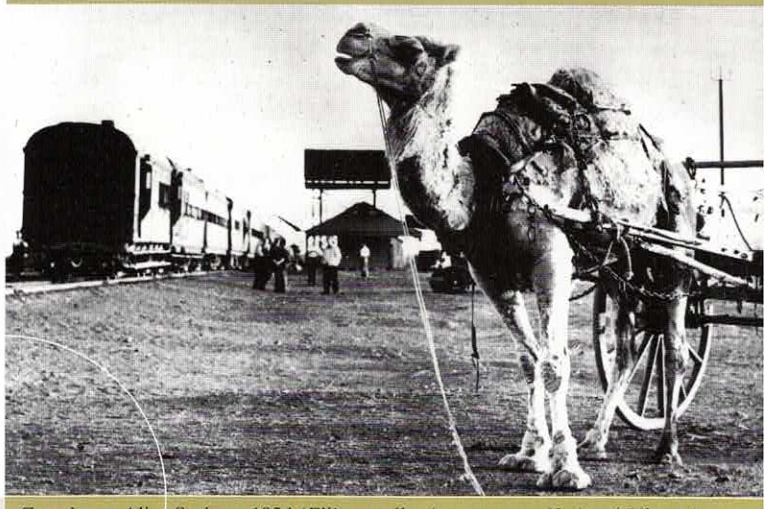
Even to a girl, there seemed to be something about a steam engine which is missing from the diesel and electric trains we have today...

Woman waiting for the train at Batchelor (*Kirkbride Collection, State Library of Victoria*)

It hissed and snarled, grunted and whistled, and smoked like some monstrous human being. We came to regard ours as a friend almost as much as we did the driver and the firemen. These men, in their blue overalls with big sweat rags of cotton waste, were friends indeed. They made the trip a joy for us all. When we wanted a cup of tea, for instance, we simply took a teapot along to the driver at one of the frequent stopping places. He pressed a button and, presto! We had a potful of boiling water. Nor were they ever in a hurry; they didn't mind stopping for a yarn with passers-by, or waiting patiently for passengers who wandered off. If some were more than usually slow in returning to the train the driver would blow his whistle peremptorily, but never did he threaten to leave anyone behind. He knew none were travelling north for pleasure.

From Oodnadatta, the family had a 300 mile trip to Alice Springs, which took 18 days of following the line of telegraph poles by horse-drawn buggy and buckboard. There was no protection from the weather as they travelled through gibber and sand, on iron-tyred wooden wheels, cooking utensils and water bags hanging from the buckboard. Five horses were needed, with another 30 in reserve, but many had to be abandoned after the strenuous trip.

Once the family had arrived in Alice Springs, their only contact with the outside world was by telegraph, with medical consultations conducted in Morse code. Supplies arrived once a year with strings of camels, which had been brought to Australia for the Burke and Wills expedition, and their Afghan riders.



Camel near Alice Springs, 1934 (*Ellison collection, courtesy National Library)*

Camels in Central Australia (*Davis collection, courtesy NT Archives*)

The cost of bringing building materials to Alice Springs was prohibitive, most early graziers living in primitive camps without their families. In 1929, when Alice Springs' 200 residents gathered to meet the first *Ghan*, which arrived over five hours late after boiler problems at [redacted], the *Northern Territory Times* and *Gazette* predicted "striking developments in the pastoral and mining industries as a result of the line which should do much to make life in Central Australia more comfortable and less costly".

Rumbalara

A transcontinental line

The first suggestion of a transcontinental line between Adelaide and the tropical north came from a Melbourne businessman, J. Roberston in 1858. This was four years before land speculators financed John McDouall Stuart's trip across the continent; five years before South Australia took control of the Northern Territory; and eight years before the settlement of Escape Cliffs (which moved to Palmerston in 1869). Not surprisingly, the South Australian Government rejected the offer.

However, the benefits of a transcontinental railway were a constant theme of South Australian Parliamentary debate for the next four decades.

The 19th century was Australia's pioneering era, with gold seekers, adventurers and pastoralists seeking new land and fortunes. In South Australia, farmers moved north across Goyder's 'drought line' in an attempt to find more arable land, good seasons giving them confidence in the quaint belief that 'the rain follows the plough'.

Railways were needed to bring wheat and mining produce to Port Augusta and Adelaide, but these early lines were seen as the start of a transcontinental line that would foster the development of mining, tropical agriculture and trade with Asia.

The problem for the small colony was how to pay for the lines. Canada's 3000 mile transcontinental railway was built by a Montreal syndicate and funded by granting large tracts of land to the developers. But South Australians were suspicious of overseas interests and determined to build their own railways, with loans from London, confident that the lines would quickly pay their way.

In the meantime, however, South Australia was more concerned with building the Overland Telegraph line through Stuart's newly surveyed country. Not only was this the largest infrastructure development in Australia of its era, but the role played by Darwin when the cable arrived from Java in 1872 symbolised the Top End's strategic importance to Australia.

By the time the telegraph line was completed, its costs had quadrupled and the South Australian Government was broke. A vote to build a railway line by land grant was narrowly defeated in 1872. In 1876, a Bill authorised a railway line from Port Augusta to Government Gums (later Farina), saying:

'Trains carrying goods, or goods and passengers, shall not travel at a greater rate of speed than 14 miles an hour; and trains carrying passengers only shall not travel at a greater rate of speed than 20 miles an hour.'

Crossing the Gap between Alice Springs, and Birdum during World War Two *(Australian War Memorial, Neg 004 176)*

The £578,944 construction contract, the largest of its kind in Australia, was awarded to a South Australian firm, Barry Brookes and Fraser. The first sod was turned by Governor Sir William Jervois in January 1878 - two months after the first work gangs had actually left Port Augusta. As the newspapers of the time reported:

He believed it was Trollope who said that this railway was to go through a desert to nowhere. But he ventured to say that it did not go through a desert and that it went everywhere. If it only went to Port Darwin it would be worth constructing. But in going there it went to Java, India, Siam, China, and also shortened the communications with Europe and America. The line would ramify eventually to Queensland and New South Wales, and who could tell the full benefits which would accrue from connecting all these colonies with the iron band of a railway.

This Southern Line reached Oodnadatta in 1891, which remained the railhead until the line was extended to Alice Springs in 1929.

As late as the 1970s, Territorians have fond memories of the old Ghan crossing bad sections of the track at walking pace, or being held up for days at flood-prone Finke. Former Territory policeman Tony Kelly recently recounted working at Finke in the 1950s for *Citation*, a magazine published by the NT Police Historical Society:

The main events of the week were the arrival of the Ghan, which stopped at the Finke to fill the depleted water tanks of the steam engine, and to refresh the passengers at the pub. When ready to leave, the train would blow its whistle to empty the hotel. Sometimes it would have to start up and move the carriages to convince the drinkers to leave. It was a hectic half - hour but never any trouble as the customers concentrated on drinking. The Ghan was not air conditioned - I don't think anything was - and at that time it did not have a Bar.

In 1980, a new standard gauge line opened from Tarcoola to Alice Springs along a less flood-prone route.

Joe Davis collection (*Courtesy of NT Archives*)

A photo from the collection of fettler Joe Davis showing navvies working on the Wire Creek to Alice Springs line in the late 1920s; note the gloves to guard against hot rails. (*NT Archives*)

The Northern LIne

In 1883, the John Cox Bray Government introduced the *Palmerston and Pine Creek Railway Bill*. The £959,300 contract went to C & E Millar of Melbourne, while Mr Wishart won the £51,600 contract to build a jetty. The Millars proved efficient contractors and the Krupps lines and the bridges they built were still in use 80 years later.

In the north, unemployed miners from the Kimberleys, then thousands of Chinese and Indians did most of the back-breaking work. The Chinese for many years outnumbered the few Europeans living in the Northern Territory and, as miners, merchants and service providers, were essential to the Territory's early development.

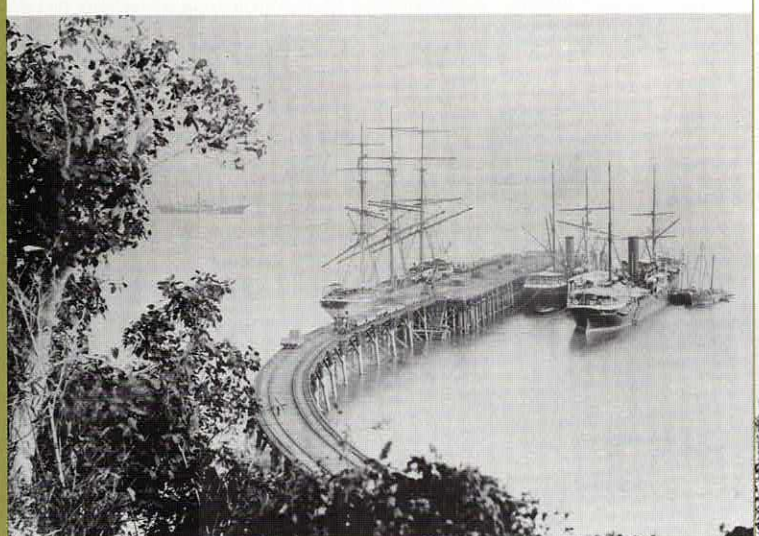
As the railway grew, it replaced Charles Haimes' weekly passenger and mail coach from Southport (a town at the bottom of what is now Middle Arm). Southport closed but Rum Jungle, Adelaide River, Brock's Creek, and Burrundie grew.

Flood Damage, 1930 (*NT Library*)

The northern line was built primarily to take freight. But after opening on 30 September, 1888, it rarely ran at a profit. The gold rush died, cattle were not proving successful and were too far from the line, the Wet season caused derailments as embankments washed away, termites ate the wooden sleepers, and the Territory's population was in decline.

By 1891, South Australia had spent 10 million on railways, the colony's bonded debt was 21.5 million pounds, two million of which was incurred in the Territory, and the completion of the northern line coincided with growing disillusionment with its northern colony. In 1911, the Commonwealth took over the administration of the Territory.

Damage caused by a cyclone in 1897 took two years to repair. Meanwhile, the Government was faced with the cost of replacing the jetty, which was suffering from the effects of toredo bore worms and the weather.



The early Gulnare Jetty from Stokes Hill (*PHM Foelsche Collection, Album 914, National Library of Australia P827/81*)

The Gulnare Jetty after damage caused by strong erratic tides and borers in 1893 (*Tracey Collection, NT Library*)

As part of the new administration the first Superintendent of Railways and Harbour Master, H V Francis, was appointed by the Government Resident Gilruth in 1912. Francis' responsibilities included the Government owned steamer fleet, collecting lighthouse dues from visiting ships, maintenance of the Government's electric light and refrigeration plants, and care of the Resident's car.

Darwin was hardly a thriving tourist destination, but when steamers called, special trains met them at Port Darwin and took passengers to the Botanic Gardens, the town's sole tourist attraction, for a fare of two shillings.

By now, the total non-Aboriginal population was still only 3310 (1418 European, 1331 Chinese, 280 Aborigines of mixed race and 281 'others'). Poor economic conditions continued to plague the railway, with the failure of crops at Batchelor and the short-lived Vestey's Meatworks between 1914 and 1920, which at its peak used three trains a day and employed 460 men in Darwin.

At the end of the First World War work began on extending the line to Emungalen, on the banks of the Katherine River, so Vestey's could get cattle to the Darwin meatworks.

The last section of this line pioneered the use of tractors and early model earth-moving equipment. The pressed steel sleepers were the first of their type made in Australia.

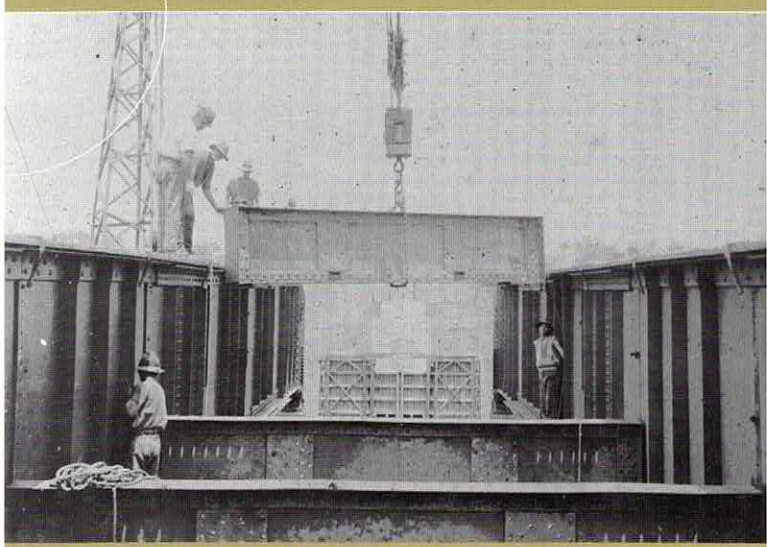
Labour was short, so Greeks, White Russians, and Patagonians were brought to Australia. A full-time doctor was appointed, the beginning of a Government medical service.

Local police soon came to know some of the 'wilder' elements of the railway gangs in Katherine. In one novel crime, thieves built a spur track into the bush, removed the goods in two vans, set the vans alight and covered their tracks by removing the rails.

Many of the workers settled in the Territory, lasting longer than Vestey's which closed in 1920, leaving the Government to meet the £500,000 cost of upgrading the line.

Despite this setback, a £94,000 bridge was finally built across the Katherine River, largely to relieve unemployment. The 213 metre bridge was based on the design of a bridge in Penrith, NSW. It consisted of seven 100-foot spans and was supported by reinforced concrete piers founded on cast-iron cylinders filled with concrete and resting on solid bedrock. Stone came from a new quarry at Edith River. It took a year to build and was used during floods for all traffic until a new high level bridge was built in 1976.

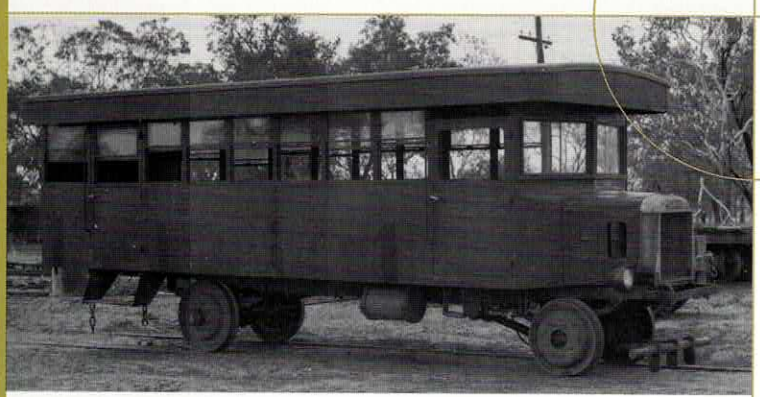
The first train crossed in 1926, Emungalen closed, and the town of Katherine grew on the new site across the river. The line was meant to continue on to Daly Waters, but when funds ran out in the Depression, it terminated at Birdum, 509 kilometres from Darwin. There was nothing at Birdum - except a buffer to indicate the end of the line.



Construction of the Katherine Bridge, 1926 (*Finniss collection, courtesy NT Archives*)

The inefficiencies of rail and the lack of a sealed road made Darwin dependent on shipping - until the Second World War when shipping became unsafe and troops moving to the north had a long and uncomfortable trip by land.

Darwin became a strategic defence post after 220 Darwin people were killed in 1942 in a Japanese bombing raid. At the peak of defence activity in the north, there were 120,000 troops and, since shipping was no longer safe, the railway became essential for supplies. Unfortunately, the rail and rolling stock had run down and the first troops arrived in converted cattle trucks, dubbing their northward ride the 'Spirit of Protest'. A unique carriage was made for short trips by placing a Leyland truck chassis on rail wheels. The contraption looked odd, but necessity was the mother of a useful invention!



Leyland truck on a railway chassis during World War Two (*Australian War Memorial, Neg 57423*)

The need to move troops and supplies led to suggestions of closing the 1000 kilometre gap between Birdum, where the northern line had reached in 1929, and Alice Springs.

Hundreds of volunteer firemen and train drivers came to work in the Territory during the war as Darwin's rolling stock received a massive boost. Not only did they work long hours in trying conditions, but considerable ingenuity was required in restoring damaged lines as there were no cranes or breakdown carriages. Because they lacked continuous brakes, the trains were difficult to control and there were many derailments.

After the war, the railway had mixed fortunes. Despite the introduction of diesel hydraulic rail cars with air-conditioning and reclining seats, the line was not well patronised and deteriorated. There was a boost in the 1960s with the opening of the Frances Creek iron ore mine, which closed in 1976 - the victim of damage from Cyclone Tracy in 1974, a crash caused by an out-of-control ore train in 1972, and declining iron ore sales.

Darwin people were upset at the loss of their line. As Harvey says in his book, *The Never Never Line:*

Profit-making had never been a high priority with the Never Never Line. Service had been its prime motivation over the years - not the blue ribbon service which panders to the upper circle but practical, down-to-earth, pioneering service proffered cheerfully within the limits of meagre resources. Its trains had run whenever asked, despite enemy bombs, cyclones, floods, economic depressions and recessions, government and public indifference, and the inexorable delay caused by the tropical environment.

National Australia Rail became a freight agency for road trains and redundant staff were given priority for other jobs in the public service, including work as prison guards.

The rails were disposed of, at $50 a tonne, to Queensland, and as reinforcing rods to Hong Kong, Taiwan and the Philippines. Sleepers were donated to Indonesia under the Colombo Plan. Wagons went to Port Augusta in South Australia. The old Larrimah school for the children of railway workers was moved to Berry Springs.

Troops on the 'Spirit of Protest' - a converted cattle wagon (*Levitt collection, courte NT Archives*)

Gauges

In the early days of Australian railways, no one imagined that the many railway lines would one day connect to a national network. This, combined with a lack of coordination, meant Australia built its railways to three gauges, with trains unable to travel from one to another. When the New South Wales and Victorian lines finally met at the border, for example, passengers had to disembark with their luggage, cross to the other side of the platform, and get on a new train.

As late as 1965, a typical trip between Adelaide and Darwin meant travelling:

- from Port Pirie on broad gauge, where there was a bogie change;
- from Port Pirie to Maree on standard gauge, where goods had to be taken off the train;
- from Maree to Alice Springs on a narrow gauge track;
- reloading for transport from Alice Springs to Larrimah by road;
- and finally, loading onto another train for the trip by narrow gauge to Darwin.

The process was time-consuming, with theft common and damage caused from double handling.

In the 1970s, most of Australia's railway networks were standardised, including the Tarcoola to Alice Springs line, which opened in 1980. The final link to Darwin will be standard gauge, with most freight transported in containers which can be moved easily from ship to road or train.

Many of the railways built in South Australia and the Northern Territory were built to the Irish narrow gauge (reputedly the width of chariot wheels) to save money. Some trains in South Australia had more than one set of wheels so they could swap gauges!

Closing the trade link

Port Darwin is one of the finest harbours in Australia... So sure as to-morrow follows to-day this magnificent harbour will be the Singapore of Australia, provided, of course, certain works are under-taken and restrictions removed.

The work I refer principally to is the trans-contintental line, an undertaking which is bound to be carried out in time, and which will connect the two splendid ports of Augusta and Darwin.

As these comments from Sub-Collector of Customs, Alfred Searcy show, the vision of a railway linking with Darwin's deep natural port is hardly new. Searcy's comments were made in 1909, reflecting on his time in Darwin in the 1890s. They might just as well have been made in the 1990s!

Darwin has long looked to its north, beginning with visits by the Macassans to fish for trepang and trade with the Yolgnu people of Arnhemland. The first British settlements in the north, at Fort Dundas (on Melville Island from 1824 to 1829), Fort Wellington (Raffles Bay from 1827 to 1829) and Port Essington (1838 to 1849) were established for both defence and trade.

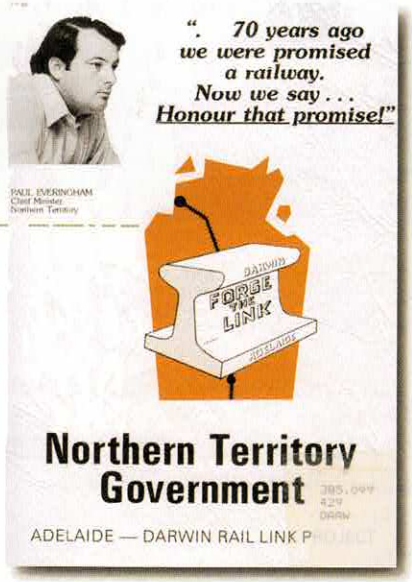
When the Overland Telegraph was completed it 1872, it was Darwin where the cables carrying messages from across the world came on shore. In 1934 Imperial Airways, in conjunction with Qantas, began a regular mail and passenger service from London to Sydney, via Darwin.

Yet it is the dream of a trans-continental railway that has engaged South Australians and Territorians for 140 years.

The first promise to complete the line formed part of the *1910 Acceptance Act*, when Prime Minister Alfred Deakin and South Australian Premier Tom Price agreed on the terms for the transfer of South Australia: that the Commonwealth would take over the State's £3 million debt, it would acquire the Port Augusta to Oodnadatta Railway, and it would complete a transcontinental line. In 1961, the South Australian Government took the Commonwealth to court to have the line completed - but the court ruled that no date was given in the 1910 Act, therefore the undertaking had not yet been breached!

In 1949, after a line was suggested from Townsville, the Commonwealth agreed to link Birdum with Alice Springs under the *Railways Standardisation Agreement Act*, which planned for the conversion of South Australia's narrow and broad gauge lines to standard gauge.

In 1977 the Bureau of Transport Economics investigated the potential of the north-south line and recommended instead that the highway be upgraded. A new standard gauge line, along a less flood-prone route, was completed between Tarcoola and Alice Springs in 1980 and the Commonwealth Government pledged $10 million for preliminary work and design for the last section to Darwin.



In 1980, Chief Minister Paul Everingham complained bitterly of the 'missing link':

We see it as the greatest single need in the evolution of the Northern Territory. We see it as fundamental to the continued growth and development of the Northern Territory and to a great extent to continued progress of Australia as a whole.

The Territory Government developed a "National Act of Faith" slogan, gave a 1988 deadline, and even held a name the train competition.

In 1983, Prime Minister Malcolm Fraser announced that the rail would be built by 1988. Chief Minister Paul Everingham sent him a crate of champagne, prematurely as it turned out, as Fraser lost the 1983 election and the new Hawke Government said the size of the deficit ruled out a railway.

David Hill, then Chief Executive of NSW Rail, conducted a study on the costs and benefits of completing the line by 1992. He concluded:

"Even by adopting an optimistic view of the future growth in the Northern Territory, the Inquiry found that investment in the railway between Alice Springs and Darwin cannot be justified and would constitute a major misallocation of the nation's resources."

In 1994 the Wran (Committee on Darwin) report determined that the railway would be viable by the turn of the century. A Transport and Works study found that the Wran committee had under-estimated the freight likely to be carried and subsequent reports commissioned by the Northern Territory Government, including one by the Canadian Pacific Railway consultancy, have supported the viability of the project.

Since Self-Government in 1978, the Territory has been visionary and proactive in determining its place in the region. In fact, much of the transformation began four years earlier, after Cyclone Tracy devastated Darwin in 1974. Territorians bounced back and, since 1974, Darwin's population has grown from 40,000 to 100,000 and new towns, such as Jabiru, have appeared on the map. The Government has sealed the Stuart Highway, provided good infrastructure for the road train industry, built new airports in Darwin, Alice Springs and Yulara, and boosted tourism by sealing the road to Yulara. The Alice Springs to Darwin gas pipeline has been built and communications upgraded.

Just as significantly, the Northern Territory has pioneered the establishment of good relationships with our neighbours in the Asia-Pacific region and was the first overseas Government to sign a Memorandum of Understanding with Indonesia, followed by several other regional agreements. In 1995, the Government signed a Memorandum of Understanding with South Australia, a partnership providing the basis for the joint South Australia/Northern Territory approach to making the AustralAsia railway a reality.

In 1997 the AustralAsia Railway Corporation was established by the South Australian and Northern Territory governments and tenders were called to build the railway as a BOOT operation: which stands for Built Own Operate and Transfer back. This is part of a growing trend in Australia to private construction and building of railways, which are recognised as an important part of a competitive transport industry.

In June 1999, it was announced that the Asia Pacific Transport Consortium had been selected as the preferred bidder to build and operate the railway. In October, 1999, funding was finalised, with the Northern Territory Government contributing $165 million, the Federal Government contributing $165 million from its Federation Fund and the South Australian Government contributing $150 million. The remaining $750 million will be raised by the Consortium.

The Future

The completion of the AustralAsia Railway is more than the fulfilment of a dream and far more than just a railway.

For the first time, Darwin will be linked to Australia's national railway network, providing a new and competitive transport system which includes the Territory's modern road, rail, air and shipping links.

The railway will end at Darwin's new East Arm Port, linking ships from Asia with a railway system that will save between seven and ten days' shipping time between Adelaide and North Asia. This won't suit all freight but will particularly advantage perishables such as seafood, chilled meat, flowers and fruit and vegetables, and car parts which must get to market quickly.

The number of containers shipped around the world is expected to double in the next 10 years. As regional trade increases, our vision is to make Darwin the 'Gateway with Asia' for freight to and from Australian and Asian markets, linking with ports in Singapore, Taiwan, the Philippines, Japan, and Korea as well as our South-East Asian neighbours. The number of containers coming through Darwin's East Arm Port in the next 10 years should increase from 8000 to 78,000 containers a year.

Accompanying this development will be a modern total supply chain approach to freight distribution, with one invoice regardless of several modes of travel, quick transhipment of containers from ship to train or other transport, computers able to pinpoint the location of freight at all points on its journey, and an era of 'mobile warehousing'.

To be competitive, freight forwarders need to get goods onto shelves quickly, reducing inventories and time spent in warehouses. The Territory's aim is to develop expertise in specialised freight areas where time-savings are critical by developing a sophisticated logistics system to coordinate freight between Australia and Asia.

The main advantage of Darwin's East Arm Port is that it can meet this need to cut transit time, simply because of its location. Not only is East Arm the only deep water natural harbour in the region, but Darwin

is the only Australian capital city in Asia, being closer to Jakarta than Sydney and located halfway between Melbourne and Manila. We are capitalising on this promixity to Asian markets by developing modern cargo, warehousing and distribution facilities.

Unlike other ports, which are in the middle of congested cities, East Arm Port has plenty of room for expansion, including warehousing and freight forwarding companies.

Once construction of the 1410 kilometre line from Alice Springs to Darwin is completed, it will link not only the railhead at East Arm Port, but also the existing 830 kilometre standard gauge line from Alice Springs to Tarcoola.

Imagine what early explorers would think of the continent finally linked by a modern, sealed highway and railway, providing a north-south rail link for the first time in Australia. Goods will be able to travel quickly and efficiently by road or train across a transcontinental 'landbridge' linking markets in Asia and Southern Australian.

Mining will be a major beneficiary, including the Tennant Creek and Tanami regions in the Northern Territory and the South Australian Steel and Energy project near Coober Pedy. Because mining products are bulky, it is often uneconomical to operate in areas not connected to railway lines - some of the most profitable lines in Australia are those serving iron ore and coal mines.

But the economic spin-offs from the railway go much further.

The three-year construction period will boost employment and industry in the Northern Territory and South Australia, especially in regional areas.

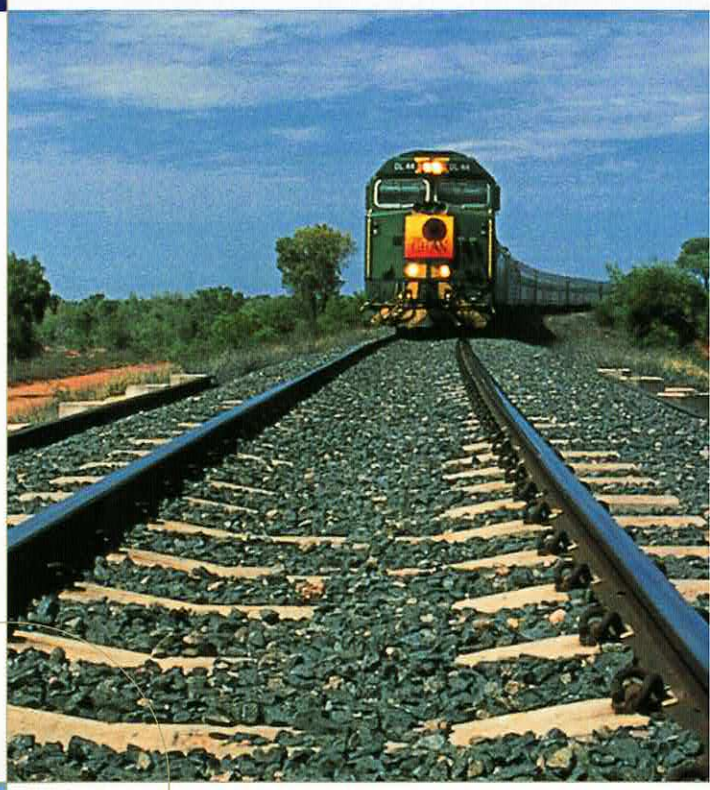
The enormous amount of material needed to build the railway includes:

- **150,000 tonnes of steel - sufficient to build three Sydney Harbour Bridges**
- **2.25 million sleepers - which if laid end to end would extend from Darwin beyond Singapore**
- **15 million cubic metres of earthworks, which represents 1/13th of the earth moved to build the Panama Canal (the largest earthworks project in history which took 100 years to build)**
- **The earthworks would be the equivalent of an area the size of a city block filled two kilometres high.**

This is good news for South Australian steelworks, the trucking industry which will carry construction goods to depots, and sleeper factories in Katherine and Tennant Creek, just as previous railways boosted coal mines to provide fuel; timber mills to provide sleepers; Australian foundries and engineering workshops to provide carriages; the steel industry to provide thousands of tonnes of steel; and even breweries as new lines made it economical to transport beer to inland pubs!

The new transport system will provide greater mobility to the Territory's growing defence industry. In 1999, Darwin became a major supply centre and headquarters for defence and aid operations in East Timor. Although this proved Darwin's capabilities, defence activities would have been enhanced by a railway link.

Just as importantly, the railway is integral to regional development. The vision of an efficient transport and warehousing system was outlined in 1996 strategic plan *Darwin 2010 - The Multi-Modal Transport and Logistics Hub* and broadened in the Northern Territory Government's 1999 blueprint for social and economic development, *Foundations for Our Future*.



More competitive freight systems will make goods cheaper in regional areas and create better access to markets, including potential road transport links with the railway to the Carpentaria/Mt Isa Mining Basin on the Queensland border and Stage Two of the Ord River Irrigation Area straddling the border of the Northern Territory and Western Australia.

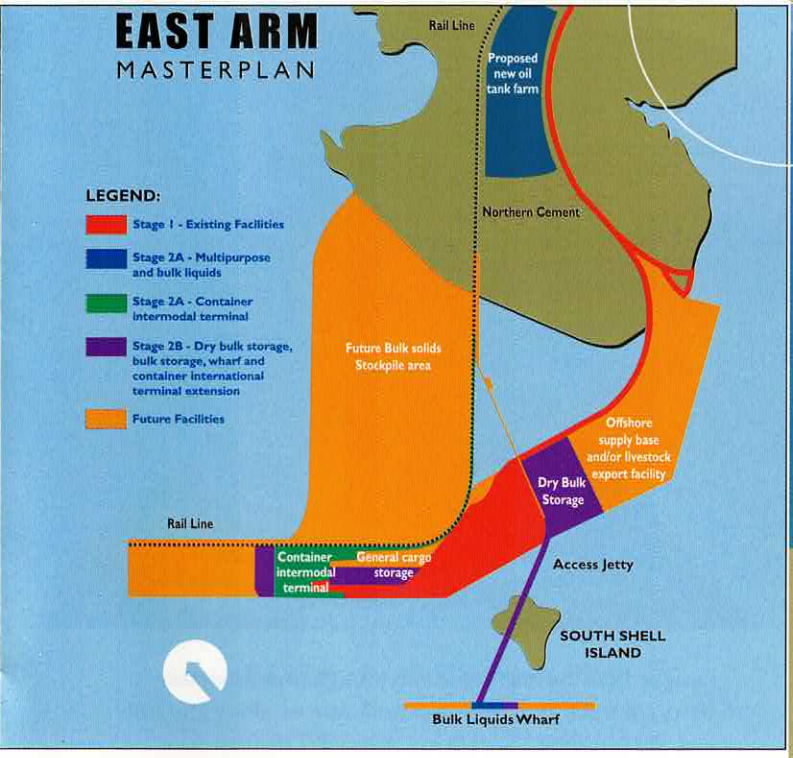
The railway will make it possible to extend the famous Ghan service to Darwin, making the Sydney-Melbourne-Adelaide-Alice Springs-Darwin trip one of the great train journeys of the world.

Many environmental benefits will flow from the railway, including reduced road maintenance costs, a reduction in greenhouse gas emissions and fuel savings.

Finally, the railway will underpin a major expansion of the Territory's industrial capacity. The relocation of new businesses to the Territory will diversify its economy and bring new skills. The railway will also support new onshore industries accompanying the growing oil and gas developments in the Timor Sea.

The AustralAsia Railway is the largest infrastructure project for the Territory since the building of the Overland Telegraph Line in 1872.

Just as the telegraph line meant far more than 15,000 telegraph poles across the desert, the railway line is far more than two tracks of steel across the continent. It is the final link in the social and economic development of a vibrant and rapidly growing region, which first linked Australia to the world via a thin cable coming ashore from Java in Darwin.



East Arm Port

The township of Darwin, then known as Palmerston, grew on a tableland overlooking a magnificent natural harbour.

In 1869, Goyder landed at Fort Hill (a flat-topped hill which was levelled in 1965) in the *Moonta* to start survey work for the new town.

As the settlement grew, however, people still crossed the harbour to Southport to travel inland, as it was the terminus for bullock wagons and coaches heading to the gold fields and the interior.

The Gulnare Jetty, built in 1874, was replaced by a railway jetty at Stokes Hill in 1886. Darwin's busy port saw regular visits by regional shipping companies and pearl luggers, while coastal launches travelled along the Territory coast to towns

such as Fisherton (later the Victoria River Depot near Timber Creek) and Urapunga (Roper Bar). Cattle were exported to Asia and the first shipload of frozen meat left Port Darwin in 1886 on the *Changsa*.

By 1897 the jetty had fallen into disrepair, destroyed by the weather, a cyclone, and toredo bore worms. Goods had to be lightered ashore until a new Town Wharf was built in 1904, serving until the jetty and several railway locomotives and carriages were blown into the sea during Japanese bombing raids in 1942. The current Stokes Hill Wharf, built in 1956 will become a cruise shipping terminal as freight activities move to East Arm Port.

Building railways

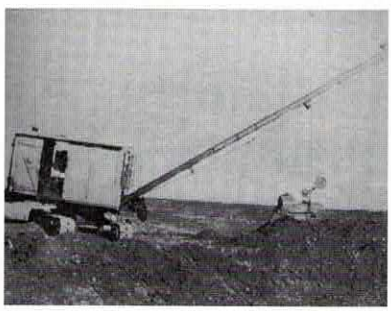
The first railways were built by thousands of 'navvies' who were paid low wages and lived in rough camps along the track. Many died as a result of the tough conditions and poor diet.

Working on the line near Batchelor, 1912 (*Kirkbride Collection, State Library of Victoria*)

In the north, navvies had to blast through granite hills, then earthworks gangs used two-wheeled carts to remove the spoil, which was reused for embankments. Chinese plate-laying gangs laid the steel rails and bolted them to sleepers, while gravel was brought to the site by railway wagons and packed beneath the sleepers.

The Southern line was built by shovel gangs using horse-drawn scoops, with Chinese 'coolies' carrying material for embankments in large baskets. The navvies lived in tents and worked in extreme temperatures.

Basil Fuller, in his book *The Ghan* describes the early railway navvy as "a strong man with the implements of his trade draped about his person - pick-axe, shovel, water-jar, and lantern slung from his shoulders; a wheel-barrow strapped to his back; an iron crowbar gripped in one fist. He had a great fondness for whisky, which he called "white beer"... the navvy carried his shovel as an infantryman his rifle, and called it his "banjo" because of a similarity in shape to the musical instrument."



The first track-laying equipment was used on the Trans-Australia Railway built in Western Australia in 1917. The first primitive earth-moving equipment was used on the Katherine line in the 1920s. The lines from Port Augusta to Alice Springs and Darwin to Pine Creek used minimal formwork, light 18 kg rails and narrow gauge lines to save costs. (The Alice Springs to Darwin line will use 50 kg rails.)

These days, railway construction is fully automated. The steel rails are taken to the construction area on special locomotives and welded together. Concrete sleepers are laid at the rate of seven per minute. Ballast is then dropped over the skeleton track, a

tamper lifts the track and more ballast is dropped before a track regulator carriage moves along the line and the tamping process is repeated.

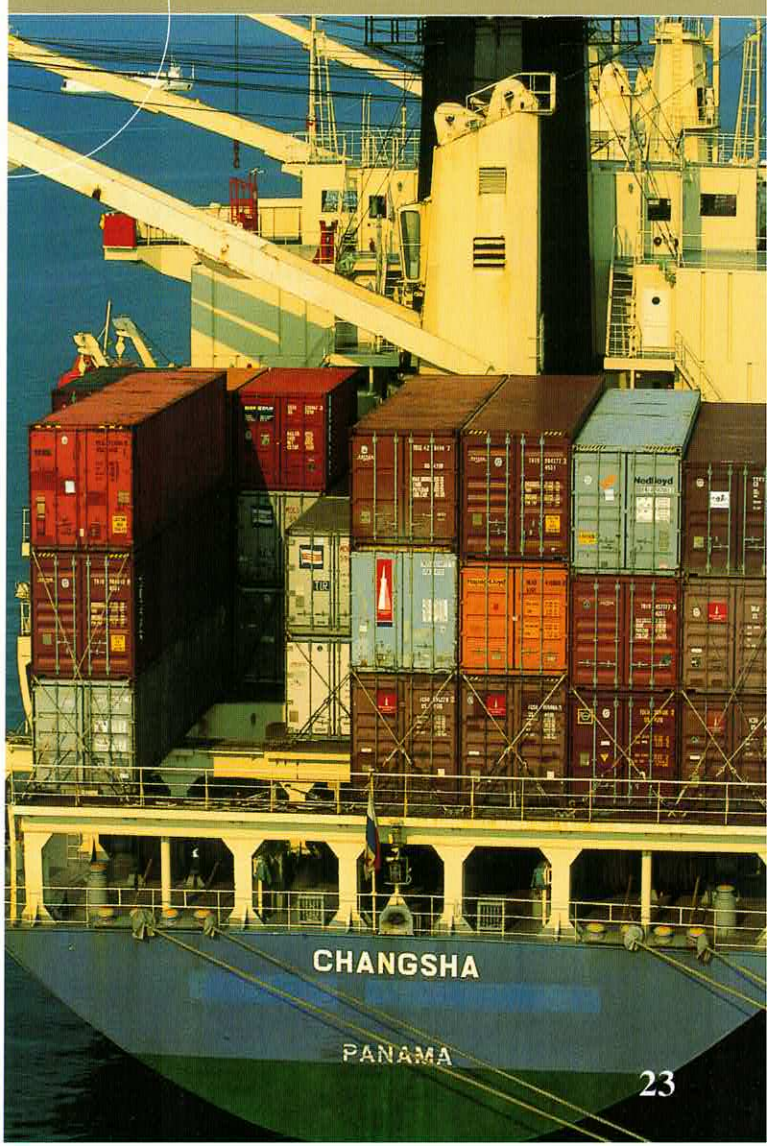
Interesting rail facts

- The curve of the earth's surface will add another 10 kilometres to the 1410 kilometre line between Alice Springs and Darwin;

- Concrete sleepers will be used instead of timber or steel as concrete is cheaper, is heavier so holds the track better (especially with flooding), and is easier to obtain and less susceptible to termites than timber;

- Because steel expands and contracts with the weather, the continuously welded line has to be stretched and welded under tension. The tension has to be exact: too much and the lines will break, not enough and the line will expand and buckle when hot. Unrestrained, the line would expand with the heat and stretch over a kilometre into the Arafura Sea.

- The longest straight stretch of rail in Australia is across the Nullabor Plain - a 478 kilometre stretch including the town of Cook.



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