

“ONE NATION” INFRASTRUCTURE PROJECT

1. BACKGROUND

- (i) **National Rail Corporation Ltd** was incorporated in 1991 following an Intergovernmental Agreement between the Commonwealth and State Governments to take over responsibility for all interstate rail freight from Australian National and four state-based rail authorities. It had been readily accepted that reform in the interstate rail freight industry was essential, in view of financial losses of \$324 million p.a. 1990/91, market share being depleted by road transport, and inefficiencies through disparity of state system operations including two gauge changes.

National Rail was formed in January 1992 as an equity funded national body, with shareholders being the governments of the Commonwealth, New South Wales and Victoria, and commenced operations in April 1993.

Fundamental to achieving reform in the rail industry across Australia and creating a viable interstate freight system with levels of efficiency and service comparable to the world's best was:

- Enterprise Agreement with ACTU and rail unions to provide a framework for a multi-skilled, team based workforce and a new culture of quality service operating twenty-four hours a day, seven days a week.
- Productivity gains - including improved working at terminals, more efficient use of wagons and locomotives, simplified signalling and commonality of standards for track, vehicles, and safeworking procedures, and an end to changing train crews at State borders.
- “One Nation” funding - an initial injection of betterment capital funding from the Commonwealth Government. This catch-up funding was aimed at strengthening sections of track, bridges and formation to improve stability, reliability and operational efficiency (reduced running time); the hub of the programme being the Melbourne to Adelaide gauge standardisation project.

(ii) “One Nation” Rail Infrastructure Upgrading Programme

In February 1992, the Prime Minister published the “One Nation” Economic Statement which included a major programme of investment in Australia's national rail network. This injection of funds was part of an overall strategy to accelerate economically justified infrastructure spending, create jobs and significantly improve the economy's long-term growth potential through micro-economic reform.

The "One Nation" programme had strict funding constraints (\$452 million, reduced to \$429 million) to be spent in 3 years.

The cornerstone of the programme was the linking of five state capitals across Australia from Brisbane to Perth by a standard gauge over 6,700km of track.

June 1995 saw National Rail complete this link by converting the 830km Melbourne to Adelaide section to standard gauge - \$184 million.

This was achieved by building 60km of new standard gauge track, conversion of 30km to dual gauge and by regauging the remaining 740km.

The major component of the \$429 million programme was allocated to upgrading the track across the national rail system, and providing new freight lines in the Sydney area.

Significantly the Melbourne - Sydney - Brisbane corridor attracted the majority of upgrading projects, reflecting the inherent operational inefficiencies caused by short crossing loops, sharp curves and steep grades added to past deferment of necessary betterment works.

2. "ONE NATION" PROGRAMME - SCOPE OF WORK

The \$429 million budget was allocated to four categories in areas where National Rail was the predominant user on a tonnage basis.

- (i) gauge standardisation; Melbourne - Adelaide
- (ii) infrastructure upgrading projects; mainly North Coast Line and Goulburn - Melbourne
- (iii) new freight lines; Sydney Metropolitan area
- (iv) upgrading of Freight Terminals and links to ports

Bids for project management were invited in late 1992. BHP Engineering was successful in their bid for the Eastern Corridor, Sydney to Brisbane and Sydney to Melbourne. On the Melbourne - Adelaide section of gauge standardisation a joint venture of Kinhill and Connell Wagner was appointed as project managers.

The principal projects were:-

	\$
• Melbourne - Adelaide gauge standardisation	184
• North Coast upgrading	85
• Goulburn - Albury upgrading	22
• Albury - Melbourne upgrading	18
• Adelaide - Fremantle improvements	13
• Sydney Metropolitan Area - improved freight access	48
• Brisbane: standard gauge to Fisherman Is. (Funding contribution)	30
• Melbourne: Dynon Terminal upgrade	21
• Adelaide: standard gauge to Outer Harbour	8
	<hr/> \$429

Although these funds represent only a minor correction of the in balance of Federal funds provided to parallel highway roadworks, it was important for them to be seen hopefully as the start of an on-going capital investment programme, necessary for provision of a competitive, profitable and commercially sustainable rail freight transport service.

From a NSW perspective, infrastructure owned and maintained by State Rail was granted approximately \$160M of improvement works over a 2 ½ year period.

3. DETAILS OF COMPLETED "ONE NATION" WORKS -

North Coast

- | | |
|---------------------------------|--|
| • 31 underbridges | - replace with concrete ballast-top structures |
| • 8 minor timber openings | - replace with concrete |
| • 15 crossing loops | - including 5 new loops and 10 extended loops to 1500m |
| • 2 deviations | - Lawrence Rd 6.5km |
| | - Rappville 3km |
| | - 60kg rail on concrete sleepers |
| • 4 Geotechnical stabilisations | - Cougal) where the security |
| | - Leeville) of train operations is |
| | - Coombell) threatened by |
| | - Macksville) instability of formation |
| • new signalling system | - Casino-Greenbank (150km), interim Electric Staff system, pending train order working in 1996 |
| • lay 270,000 concrete sleepers | - 167km track |
| • rerailing 60kg | - 11.4km track |
| • rail grinding | - 150km |

Main South (Goulburn - Albury)

- | | |
|---|---|
| • Joppa Junction | - underbridge reconditioning |
| • Wagga Wagga Viaduct | - strengthening of steel spans and trestles |
| • Albury, Murray River Bridge upgrading | - strengthen through truss spans |
| | - renew 6 approach spans |
| • Bethungra Spiral (4km) | - widen rock cuttings to remove rock fall hazard and 20kph speed restriction. |
| | - renew track 60kg rails on concrete sleepers |

Sydney Metropolitan Area -

a package of individual projects aimed at enabling Freight trains to operate efficiently through the dense commuter traffic.

- Flemington to Rhodes - new freight track
 - 700m new track
 - rebuild Bridge Road overbridge
 - construct new underbridge Subway Lane
 - provide bi-directional signalling
 - install turnouts and crossovers
 - install five 80kph tangential turnouts at Concord West and Rhodes
 - renew overhead wiring - constant tension
 - Reinforced Earth retaining walls
- Glenfield to Ingleburn - new freight track
 - 6km new up track (passing loop)
 - provide bi-directional signalling
 - extend footbridges and underbridges
 - provide three additional underbridges
 - new terminating track at Glenfield (for SRA)
- Macarthur
 - provide earthwork and new platform for future freight line (0.8km)
- Cowan
 - provide earthwork for extension of up passing loop (1.1km)
- Cowan to Hawkesbury River
 - bi-directional signalling and trackwork (funding contribution)
- Wyong
 - resignalling and trackwork (funding contribution)
- Sefton Park Junction
 - crossover renewals and realignment (funding contribution)

4. COMMENTARY

The presentation today is to analyse how National Rail and State Rail combined to achieve the obvious objective; namely to get best value of track improvements for the rail infrastructure, regardless of ownership, from the "One Nation" Funding.

Did the project create improvements in train capacity?, operational efficiency (longer trains, reduced running time)?, improved track stability?, greater reliability of service?, future maintenance.

Did we get value for money or should more have been achieved for the available "One Nation" funds?

Are there problems associated with an accredited operator providing improvements to infrastructure owned by another operator, who is a government Authority?

Did the principle players cooperate to maximise benefits to the rail system? If not, why not?

What lessons were learned to facilitate and maximise effectiveness of future improvement works being project managed on State Rail property by others, whether contractors to Rail Net, Track Australia, or National Rail)?

Fig. 1 Rhodes.

80kph tangential
turnout - preassembly
on site

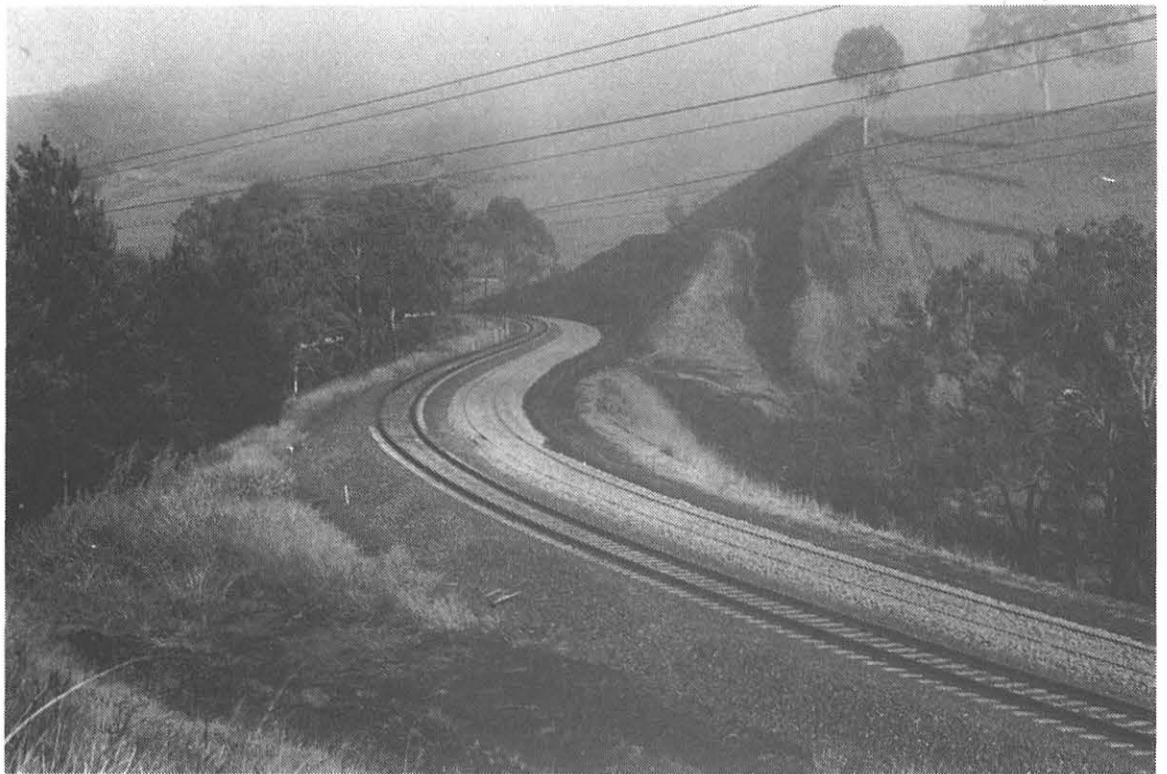


Fig. 2 Loadstone. Constructing a new 1500m loop in difficult terrain



Fig. 3. Kungala. Sherwood Creek. Timber transom top approach spans replaced by concrete & steel structure.



Fig. 4. Rappville Deviation. Deep cutting to flatten grade and remove sharp curves.

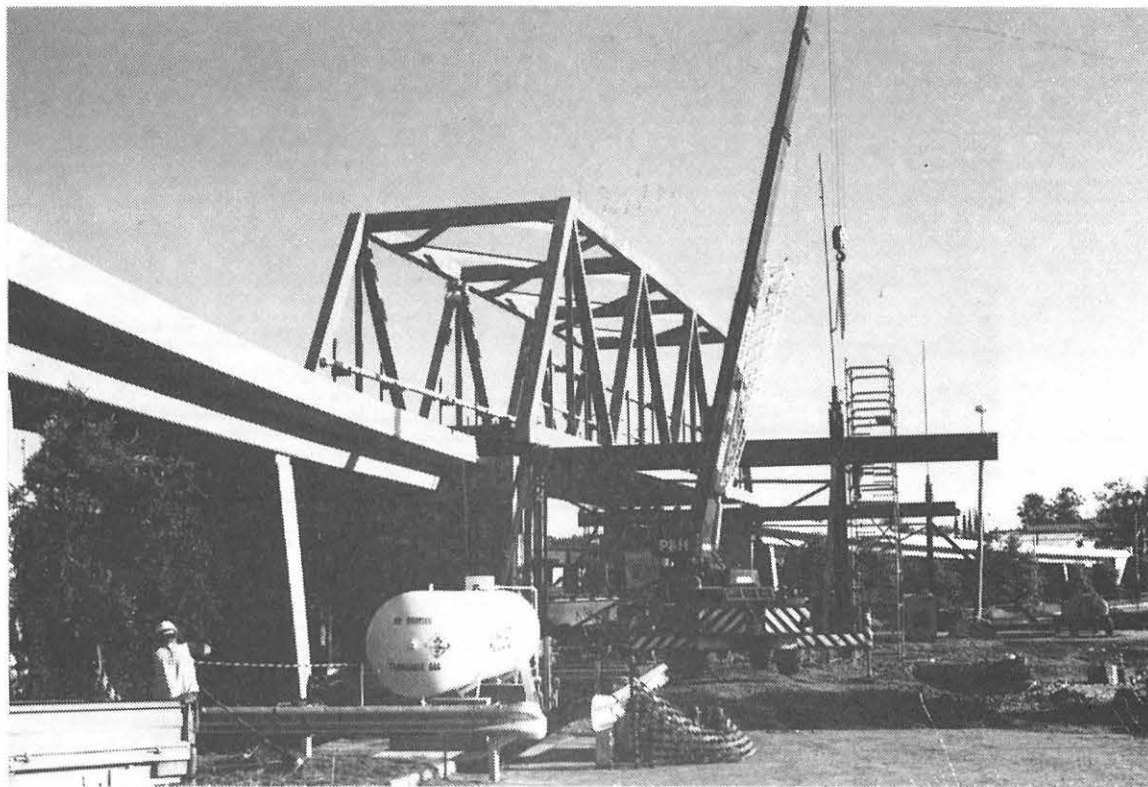


Fig. 5. South Grafton Viaduct. Erection of steel truss span over Charles St. between concrete ballast-top spans.

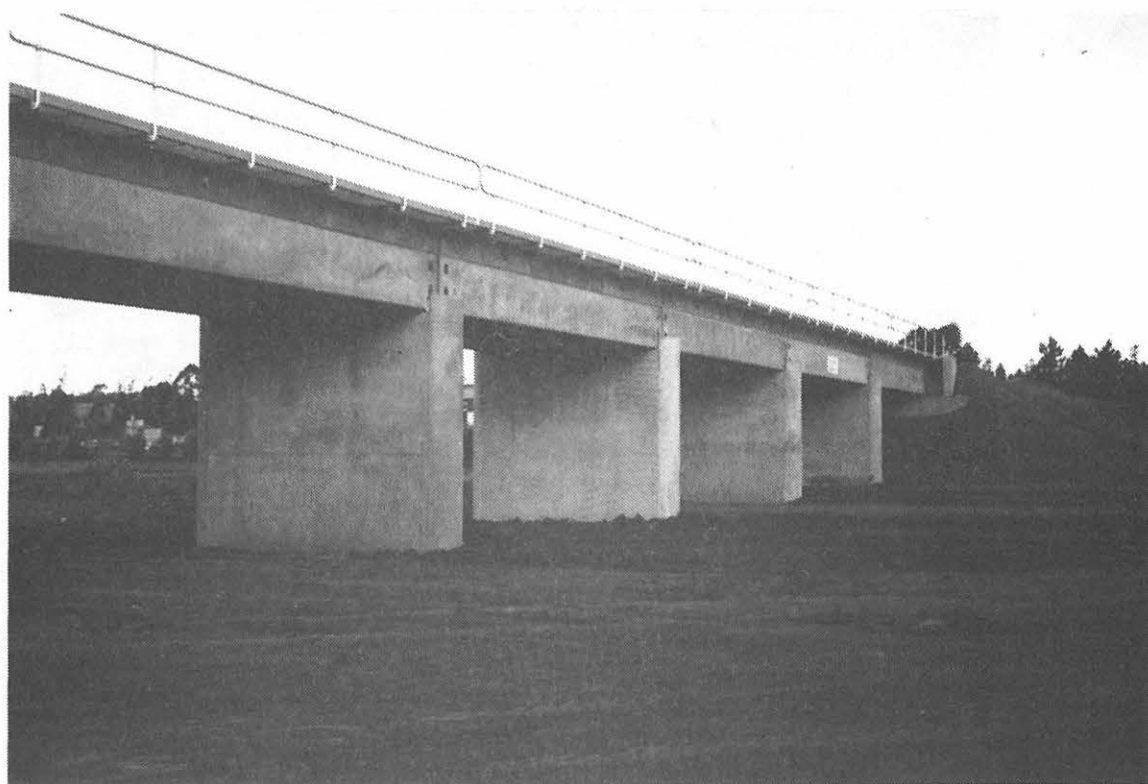


Fig. 6. Musk Valley Creek. South Grafton. Twelve timber transom top spans replaced by concrete ballast-top structure.

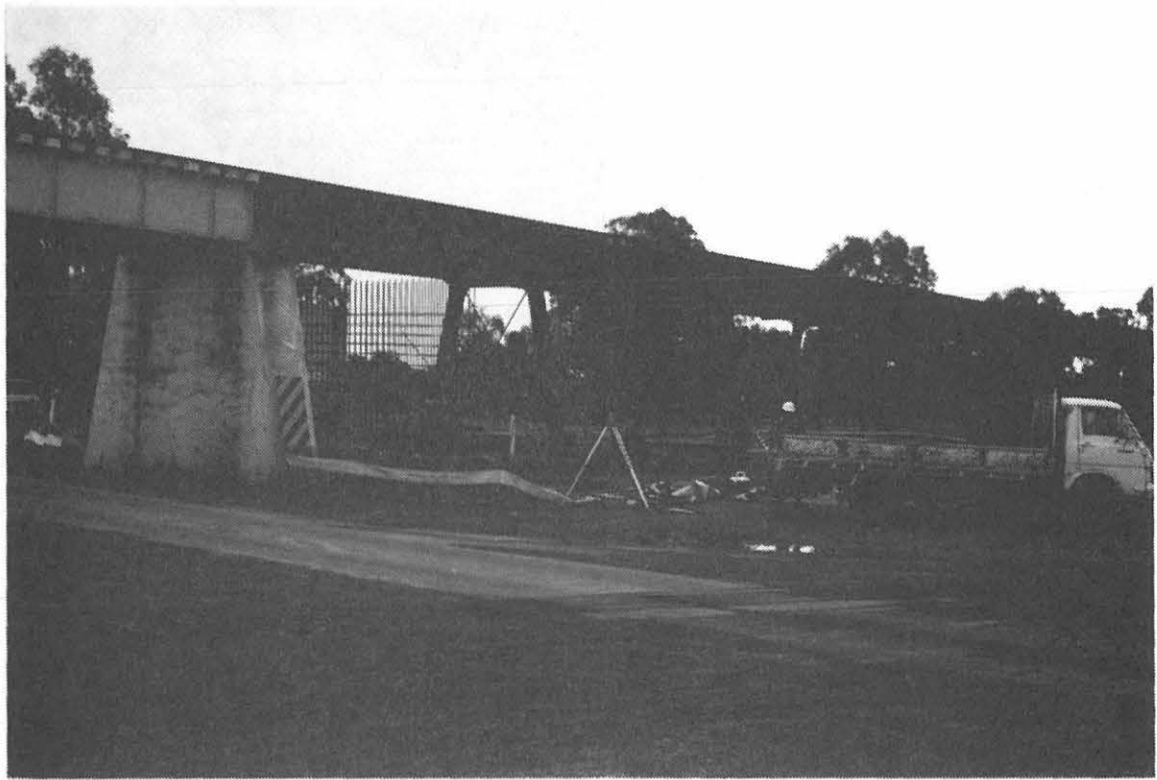


Fig. 7. Wagga Wagga Viaduct. Before -
Oura Rd underbridge & No. 1 viaduct.



Fig. 8. Wagga Wagga Viaduct. After - Oura Rd - new steel span. Old steel
trestles concrete encased with new
intermediate concrete trestles.

Fig. 9 Bethungra

Drilling & blasting
granite cutting
between tunnels.

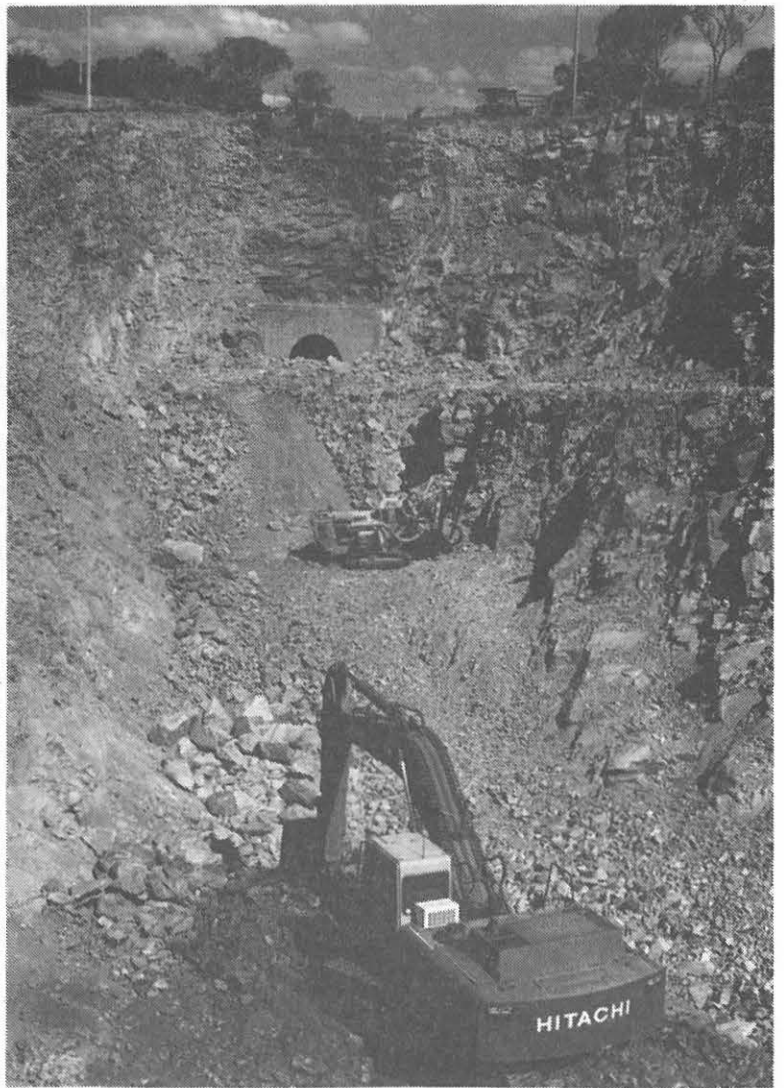


Fig. 10 Bethungra. First train through widened granite cutting between tunnels