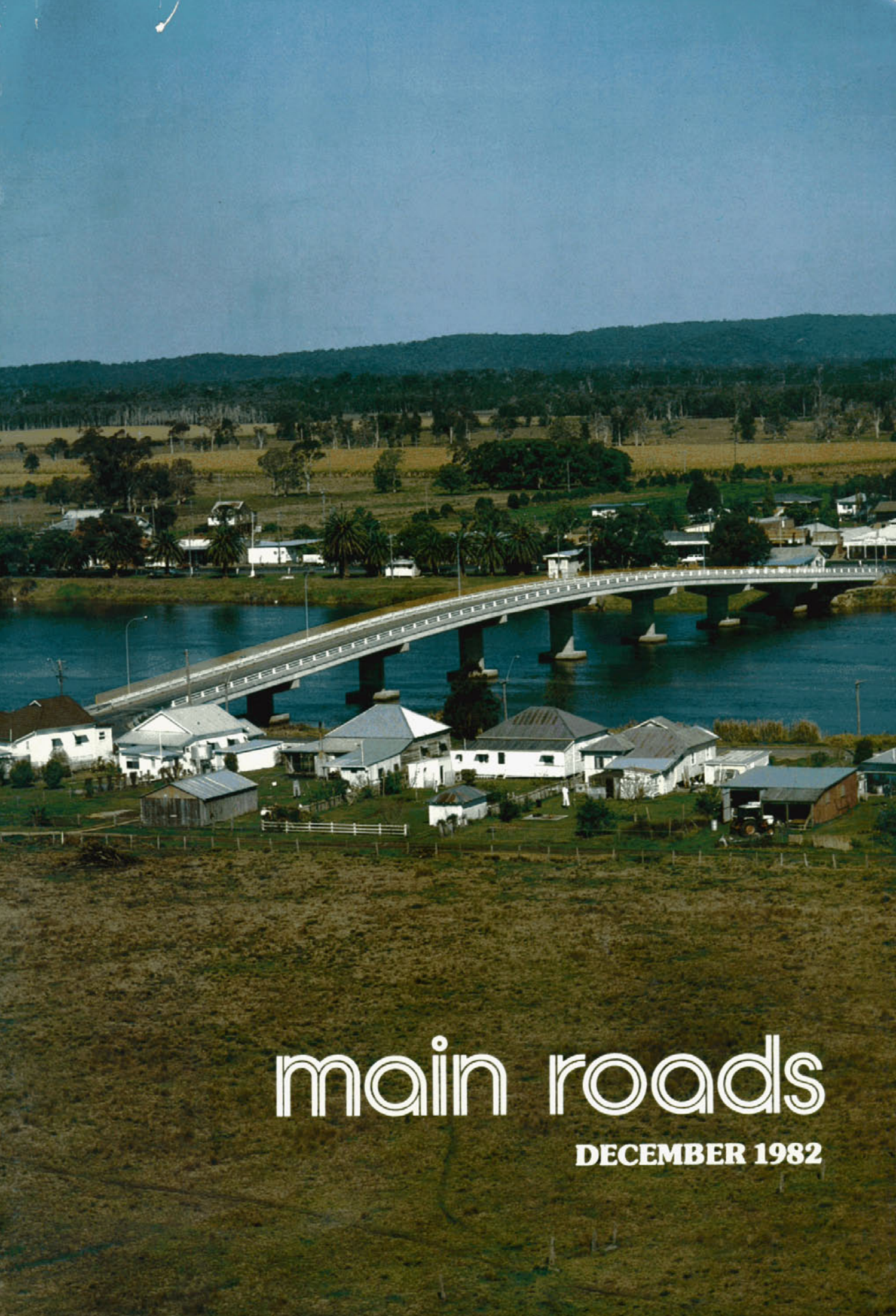


# main roads

**DECEMBER 1982**

# main roads

JOURNAL OF THE DEPARTMENT OF MAIN ROADS, NEW SOUTH WALES

DECEMBER 1982, VOLUME 47 No. 4
ISSN 0025–0597

**CONTENTS**




***Front cover: the recently opened bridge over the Richmond River at Woodburn. Back cover: work in progress to replace the level crossing and improve the alignment of James Ruse Drive, Granville.***

Issued by the Commissioner for Main Roads, B. N. Loder.

Price one dollar

Annual subscription four dollars post free



Additional copies of this journal may be obtained from the Public Relations Section, Department of Main Roads, 309 Castlereagh Street, Sydney, New South Wales, Australia.

Typeset by Dalley Photocomposition

Printed by Seaborn Printing Pty. Ltd.

## MAKING THINGS EASIER

*Life wasn't meant to be easy* has taken off as a phrase well suited to the troubled eighties. Its recent popularization has even found adaptations in various commercial slogans and jingles.

The phrase was first coined by the Roman poet Virgil in *Georgics*, and a more recent usage occurred in George Bernard Shaw's play *Back to Methuselah:*

> *Life is not meant to be easy, my child,*
> *but take courage it can be delightful.*

The popularity of the phrase is due in no small part to the fact that we all seek its opposite; we all desire things to be easy. Depending on our outlook, we choose either to make life easier for others or easier for ourselves.

It seems to be part of our nature to choose the shortest route, the gentlest slope, the line of least resistance.

The same could be said for roadbuilding. The slightest grade and the shortest distance are both significant paramaters within which the Department operates. By efficient use of available funds, the Department aims to make motoring more effortless; to establish the line of least resistance for all road users in this State.

The history of the Department shows that our continuing goal is, in its very essence, to make things easier for others.

The reasons why, the how, when and where, form the contents of every issue of *Main Roads*.

# F6—Southern Freeway ...an update

A large increase in population during the 1960s and 70s, coupled with a corresponding growth in vehicle numbers, caused a considerable increase in traffic volumes throughout the Illawarra Region. The growth in tourism to the south of Kiama added to the need for an improved road system.

The Department is responding to this need by establishing an efficient freeway system to serve both Wollongong and the surrounding area.

### Extension southwards

Since 1974, work has proceeded on extending the F6-Southern Freeway southwards from Northcliffe Drive with an ultimate connection to the Princes Highway at Yallah. Progressive openings have occurred in 1978 and 1981 at the interchanges at Kanahooka Road and Fowlers Road.

Roadwork for the section between Northcliffe Drive and Kanahooka Road was constructed at a cost of $5.8 million. It now provides 2.7 km of dual carriageway, crossing the flood plain of Mullet Creek just to the west of the northern end of Lake Illawarra.

Over this route the freeway formation comprises an embankment which has an average height of 4.5 metres and which contains 650 000 cubic metres of fill material. Natural material from nearby sources was unavailable in sufficient quantities due to intense local land development. A large proportion of the filling was obtained by using slag from the nearby Port Kembla Steelworks.

The natural subgrade was uniformly weak for a considerable depth. It was therefore necessary to construct the embankment south of Mullett Creek by end-tipping material to provide an adequate working platform.

Three sets of bridges were constructed as part of this section, namely:

- twin 67 metre long pre-stressed concrete structures to carry the freeway over Northcliffe Drive. These were constructed at a total cost of $601,556. The work was shared by Allied Constructions Pty. Ltd. ($488,476) and Frankipile (Aust.) Pty. Ltd. ($113,080).
- twin 250 metre long pre-stressed concrete structures to carry the freeway over Mullett Creek. These were constructed at a cost of $1,899,294 by White Industries Pty. Ltd.
- a 78.5 metre long pre-stressed concrete structure on driven piles to carry Kanahooka Road over the freeway. This bridge was constructed at a cost of $621,280 by Allied Constructions Pty. Ltd.

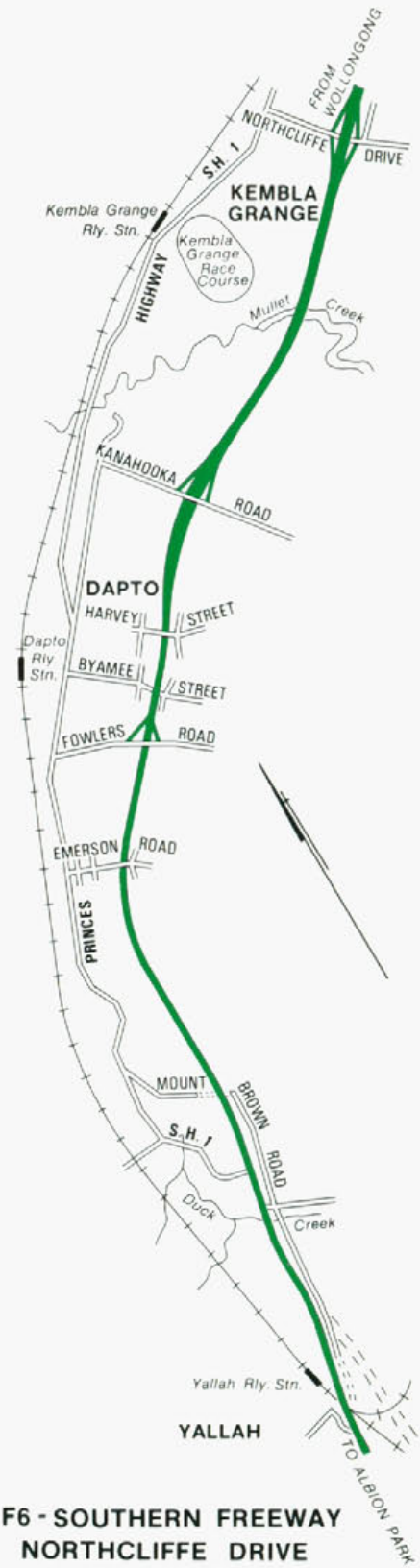
The section of the F6—Southern Freeway from Northcliffe Drive to Kanahooka Road was opened to traffic as a single carriageway in December 1978 with the second carriageway being opened six months later.

The next 1.7 km section of the Southern Freeway from Kanahooka Road to Fowlers Road was opened to traffic on 30 September 1981. The cost of the roadworks alone for this section was approximately $4 million.

Initially only a single carriageway pavement is being provided. This will reduce the time needed for construction to reach Yallah and be opened to traffic. At this location the Southern Freeway will rejoin the Princes Highway. The transition from dual to single carriageways occurs just south of Kanahooka Road

Three bridges are provided in this section. These are:

- a single 48 metre long concrete structure to carry Harvey Street over the freeway. This bridge was constructed at a cost of $265,000 by the Hornibrook Group.
- a single 32 metre long concrete plank structure to carry a single carriageway of the freeway over




F6 - SOUTHERN FREEWAY NORTHCLIFFE DRIVE TO YALLAH

***Construction south of Kanahooka Road during April 1973.***

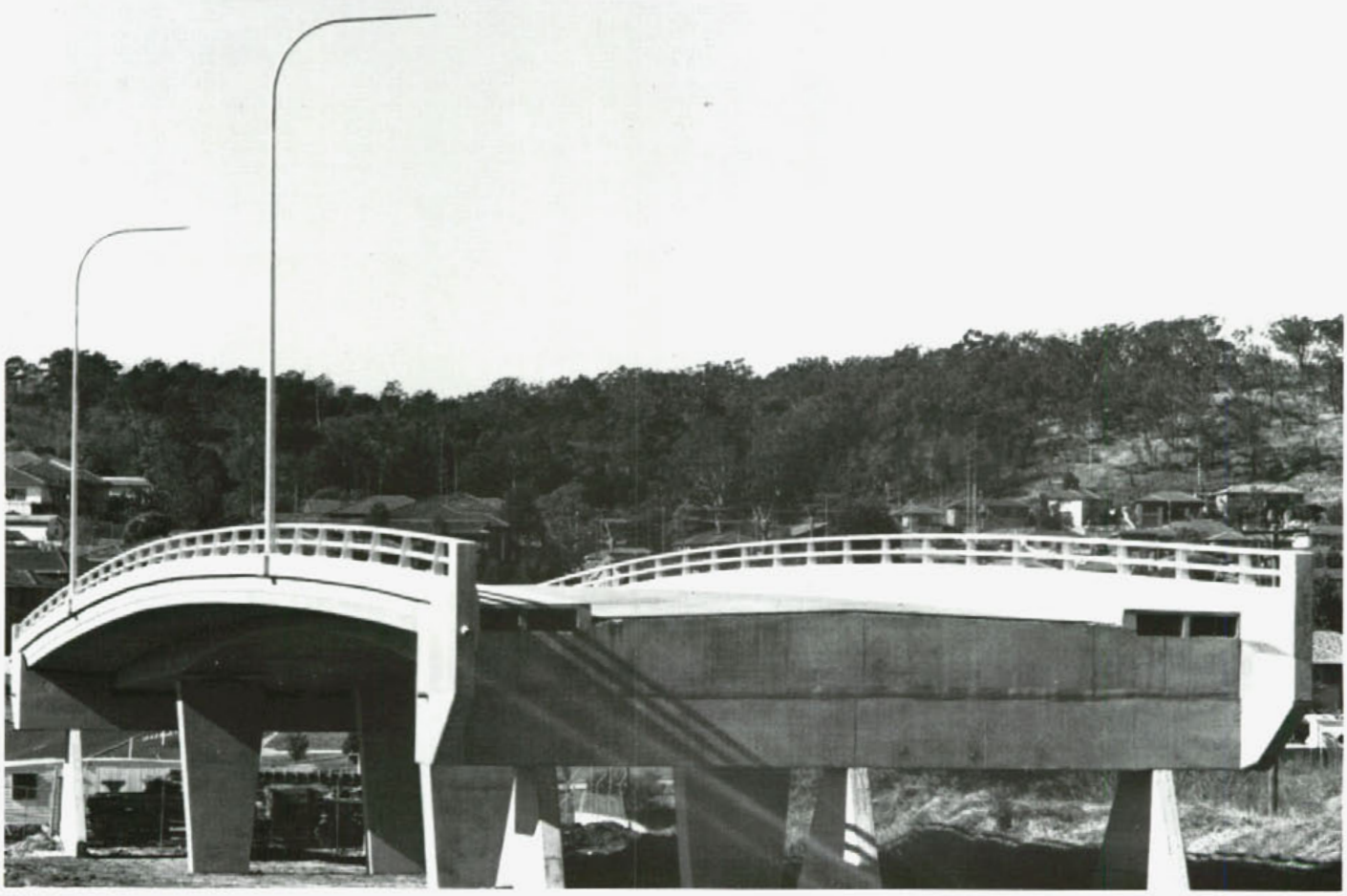
Byamee Street. This bridge was constructed at a cost of $188,584 by the Hornibrook Group.

- a single 73 metre long pre-stressed concrete structure to carry Fowlers Road over the freeway. This bridge was constructed at a cost of $829,000 by the Hornibrook Group.

At the moment only light traffic can proceed to and from the Southern Freeway via Kanahooka Road and Fowlers Road owing to load restrictions imposed by Council. Heavy vehicles enter and leave the freeway via Northcliffe Drive. The extension of the freeway to Fowlers Road south of Dapto Shopping Centre has provided considerable relief from traffic congestion.

The 4.5 km long section of the freeway from Fowlers Road to Yallah is currently

***The Emerson Road overbridge at Dapto. August, 1979.***



***Earthworks at the Mt. Brown cutting, looking south towards Duck Creek bridge.***

***Construction in progress between Kanahooka Road and Yallah as at August 1982.***

under construction. The earthworks on this section are well advanced. A 20 metre deep cutting through tuffaceous sandstone has been commenced near the point where the freeway cuts Mt. Brown Road. A pedestrian overbridge will be provided midway between this location and Fowlers Road.

A single 76 metre long pre-stressed concrete bridge carrying Emerson Road over the freeway has been completed and is now in use. It was constructed at a cost of $408,787 by Leighton Contractors Pty. Ltd.

A second bridge, which will carry the freeway over Duck Creek, has just been completed. It is a single 45 metre long pre-stressed structure and has been constructed by the Hornibrook Group at an estimated final cost of $385,000.

A third bridge, which will carry the freeway over the South Coast Railway at Yallah, is under construction. It is a single 41 metre long pre-stressed concrete girder bridge and is being constructed by the Department's own forces at an estimated final cost of $750,000.

Work on the remaining section of the freeway is progressing steadily despite such problems as the relocation of major watermains. However, if funds continue to be available, the long awaited and much needed opening of the section between Dapto and Albion Park will be realised in the near future. ●

Previous *Main Roads* articles dealing with construction of the F6—Southern Freeway appeared in the March 1971 issue (Vol. 36, No. 3, pp. 74, 78-79); December 1972 issue (Vol. 38, No. 2, p. 47); and June 1974 issue (Vol. 39, No. 4, pp. 111, 123-127).

## NEW SECRETARY

In the June 1982 issue of *Main Roads* (page 55), we announced the appointment of Mr. William Cable, LL.B., A.A.S.A., as the Department's Chief Legal Officer as from September 1981. Biographical notes and a brief summary of his career were included in that issue.

Following the retirement on 29 October 1982 of Mr. M. A. Lloyd (whose appointment and personal details were published in the composite 1979/80 issue, Vol. 45, page 41), the position of Secretary was advertised and interviews held.

Mr. Cable was one of the applicants, and we have much pleasure in now announcing his appointment as Secretary of the Department on and from 11 November 1982. ●

# THE LOWER NORTH COAST
# A difficult road to travel

Governor Lachlan Macquarie's proposal to settle the Hunter Valley soon led to the first recorded overland journey to the region. This was undertaken in 1819 by John Howe, Chief Constable of Windsor. The route of this expedition crossed the Colo River near its junction with the Hawkesbury, followed the ridge between the Colo River and Webbs Creek to Parrs Brush, and then proceeded northwards to the Hunter River.

A slight modification of this route, known as *Howes track*, was the only means of land communication with the north for some time. Surgeon Peter Cunningham described this road in 1827 as *"a rugged bridle path . . . quite unfit to take even an empty cart"*

From 1845 to 1889 there were two roads to the north, one via Wisemans Ferry and one via Peats Ferry. The circuitous route via Wisemans Ferry was the more popular because it was more improved than the other and remained so for nearly 100 years.

By 1850 the main road to the north had extended from Muswellbrook through Murrurundi, Tamworth and the Moonbi Ranges to Armidale, along the New England Tablelands to Tenterfield, through Warwick, Drayton (near the existing City of Toowoomba in Queensland) where it swung eastward to connect with Brisbane. This road followed basically the New England Highway of today.

North of Newcastle a road ran in a fairly direct line as far as Port Macquarie. Further north the coastal areas were not well served with roads and most of the goods going to or from the settlement were carried by sea. A road had been made from Port Macquarie through Kempsey to Armidale and Grafton, thence connecting Casino and Tenterfield.

Land links between the coast and the New England Tablelands were few as this area encompasses some of the steepest country in the State and is dissected by fast-flowing coastal rivers, both of which are natural barriers to roadmaking.

**Early tourism and industry**

The district surrounding Stewarts River on the lower North Coast includes such townships as Kendall, Kew, Harrington and Laurieton, the latter two having attained considerable popularity as tourist resorts.

An early tourist booklet described travel to Laurieton in this way: *"Until the North Coast Railway was opened up as far as Kendall, the only way of reaching Laurieton was by steamer direct. Now, however, that the train passes through Kendall, only seven miles from here, it is*

# Poet's corner

*Through brakes of the cedar and sycamore bowers*
*Struggles the light that is love to the flowers.*
*And, softer than slumber, and sweeter than singing,*
*The notes of the bell-birds are running and ringing.*

from *Bell-Birds*
Henry Kendall, 1839-1882

Just 15 km north of Stewarts River lies the small township of Kendall. In the solitude of the then sparsely populated district lived one of Australia's most gifted poets, Henry Kendall. Within the idyllic environment which now bears his name, his poetic inspirations were expressed in verse of a quality which made him famous as one of Australia's most important 19th century poets.

In the 1860s Kendall had won repute as a poet by regular contributions to newspapers and periodicals in Sydney and Melbourne and specifically by the publication *Poems and Songs* (1862). However, his second book *Leaves from Australian Forests* (1869) was a financial failure despite favourable reviews.

Struggling to make money to support his wife and infant son, and struggling against drunkenness, Kendall succumbed to a nervous breakdown in 1872. But, nursed back to better health, he settled with the Fagan family near Gosford for two to three years.

In 1875, Kendall went to Camden Haven, on the North Coast, as storekeeper in the timber business of William and Joseph Fagan. The Fagans built a house for Kendall, and his wife joined him there in July 1876. In 1879 he wrote the words for the cantata to be sung at the opening of the Sydney International Exhibition, and won the prize of 100 guineas offered for a poem to celebrate the same exhibition.

In 1880 his third volume of verse, *Songs from the Mountains*, was published by subscription, Kendall himself taking all the financial risk involved. The book was well received and was a financial success. The total number sold within two months was 1000 copies—then a record for a book of Australian verse.

Kendall's reputation enabled Sir Henry Parkes to secure for him an inspectorship of State forests in April 1881. In the certainty of this employment, Kendall left the Fagans in January and had moved to Cundletown, a few miles south of Camden Haven. However, his health broke down from fatigue and exposure and he died in Sydney on 1 August 1882, aged 43 years. He was buried in Waverley cemetery.

Many of Kendall's finest lyrics were composed during his time on the lower North Coast. He was no doubt inspired by the wild beauty of the bush and encouraged by the peace and solitude he found there. ●

# NEW BRIDGE FOR STEWARTS RIVER on Pacific Highway, between Taree and Kew

*more convenient to come by the faster mode of travelling. Tourists could arrange a round trip from Sydney to Laurieton via Kendall by rail, and after touring the district return from here by steamer . . ."*

The same booklet considered: *"Harrington is easily reached by car from Taree, distant about 20 miles, or from Coopernook railway station, distant about nine miles. The road is a splendid one and after leaving Taree, it passes, for 15 miles, through some of the finest dairying farms on the North Coast . . ."*

Harrington residents delighted in describing their township as *"The summer paradise of the Manning"*. In the early 1900s it was ranked among the best seaside resorts of the North Coast.

Laurieton was named after J. Laurie, the first person to take samples of Australian hardwood to England and Europe. This opened up a large timber trade from the untouched forests of some of the finest timber in the world. Laurieton also lays claim to be the first town in the Commonwealth to have trees planted in its streets in honour of soldiers who had enlisted for service in World War I. On 19 August 1916 a total of 157 trees were planted for this purpose.

## Growth and improvement

The increase in settlement in the North Coast region, coupled with the decline in coastal shipping, led to increased emphasis on road development, culminating in the bituminous sealing of the Pacific Highway being completed over its entire length by 1952. (See reference in reprint of article on the history of the Pacific Highway, available free from the Public Relations Section.)

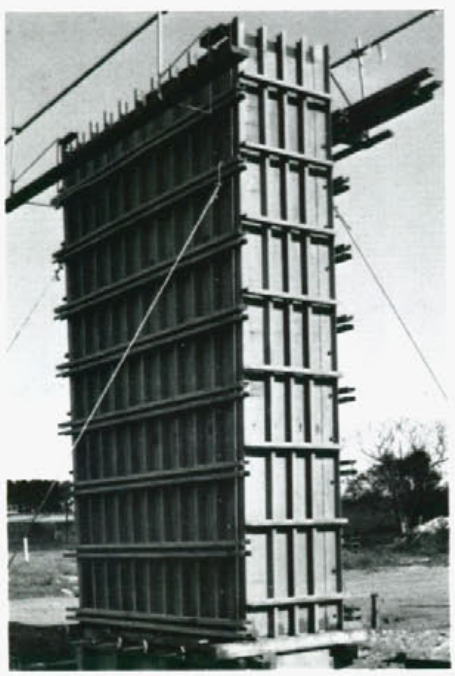
Today, the route is a far cry from the "rugged bridle path" it was a century and a half ago. The Pacific Highway between Newcastle and Brisbane is one of the most important rural arterial roads in Australia. The new bridge which will carry the Pacific Highway over the Stewarts River is yet another vital improvement to this route. ●

## Another flood-free crossing

The Department has undertaken a number of improvements to the Pacific Highway in this area. Recently the bridge over Stoney Creek 2 km north of Stewarts River was widened and the approaches realigned. The narrow bridge over the North Coast Railway line at Rossglen is currently being reconstructed on a new alignment. The highway through Kew is proposed to be reconstructed shortly. Situated 38 km north of Taree, Stewarts River has a low normal flow but rises quickly when in flood, giving little warning to highway traffic. The construction of the new bridge and approaches at this site will eliminate both the "nuisance" highway flooding between Taree and Kempsey and the last set of low-speed curves on this length.

The existing 6.1 m wide bridge, built in 1930, comprises four 10.7 m spans and is a reinforced concrete T-beam structure. It is subject to flooding and on a very poor alignment. The northern approach has several low radius curves and the southern approach crosses the river's flood plain.

***Placing of the steel formwork for one of the pier columns.***



## Above the flood . . .

Design standards require the bridge deck to be placed higher than the level of the peak flood which occurs with a frequency of once in a hundred years. In addition, the spans should allow the floodwaters to flow through the structure at a safe velocity and without increasing the height of the flood.

Rainfall of 150 mm on this catchment area is sufficient to cause floodwaters to cover the highway. These may increase to a depth of 600 mm and a velocity of 4.5m/sec during severe flooding.

It was therefore decided to provide a structure which could carry the discharge of floodwaters and yet not conflict with the railway bridge downstream. A 289 m long bridge with a deck above the highest observed flood level was found to be sufficient to carry the floodwaters at a maximum flow velocity of 3.6 m/sec.

## Basic design

A new alignment was chosen for the bridge and approaches which eliminates some of the curves on the northern approach and locates the new structure adjacent to the railway bridge.

The timber approach spans of the 275 m long railway bridge have recently been reconstructed using galvanised steel girders, while the main steel truss span has been retained. Some contrast between the new concrete bridge and the railway bridge will be apparent, highlighting not only the difference in materials but also the different factors which influence road and rail bridge design.

The bridge will be an eight span structure with six central spans each 38 m long and end spands 30.5 m long and the superstructure will consist of precast, prestressed hollow box girder segments. All girders will be supported on seven tapering piers and two spill-through abutments which will in turn be supported on piles founded on rock.

This concept is similar to the design for the bridge which carries the Pacific Highway over the Wilson River at Telegraph

Point. All the main spans will be similar, while the end spans have been determined by the need for reasonable proportions between adjoining spans yet at the same time balancing the bending moments in the continuous structure. The new bridge over Stewarts River was designed by the Department.

### Pile design

Construction of the piles was by the Department's own forces using the Benoto pile drilling rig. They were completed in May 1981 and were constructed at a rate of five every two weeks.

All pier piles are approximately 16 m long and are designed for an assumed point of fixity of 8 m below the pile cap level. Permanent steel casings were not specified as the foundation material was expected to be self-supporting during drilling. However, as the water table was at ground level, some casing was required. A corrugated steel casing was found to be economical and provided an effective permanent formwork.

### Piers and pilecaps

Construction of the piers and pilecaps has also been carried out by the Department's own forces and was completed in November 1981.

The piers vary in height between 6 m and 9 m. Each is supported on four vertical piles and the cross-section of the top of all piers is identical. They are 1.05 m deep and taper at 1:20 from a width of 3.8 m at the top. Horizontal V grooves have been provided at 2 m intervals to relieve the large flat surface area and to conceal the construction of joints. The pilecaps are 5.2 x 3.8 m and are 2 m deep. To enhance the bridge's appearance each pilecap has been set below ground level. Those adjacent to the river bank have been set approximately 2 m below ground level so that, should the river change course, erosion of the banks would not expose the piles.

### Abutments

Both abutments are of similar design and will consist of pile headstocks on which will be set the bearings for the superstructure. A hollow box will be formed between the wall behind the girder segments and the rear wall which will retain the fill. Access to the superstructure will be provided through this box via a door cast into the wingwall.

### Superstructure details

An overall width of 10.4 m will provide for a 9.2 m carriageway which is to be paved with 50 mm of asphaltic concrete. Because of the curvature of the bridge the deck will be on a constant 3% crossfall.

The superstructure will consist of a single cell concrete box girder 1600 mm deep, of which the central box will be 4400 mm wide with 2.6 m long side cantilevers, precast in short segments. The girder is to be formed by stressing these segments together by 6 tendons placed in ducts cast into each web.

The girder will be continuous for the length of the bridge, with fixity being provided at the southern abutment. It will be constructed in seven stages, the first and longest stage consisting of Span 1 and one quarter of Span 2, with a proposed sequence of construction as follows:

(i) precast segments
(ii) erect falsework
(iii) place segments in position on falsework
(iv) cast 110 mm in situ joints
(v) stress segments
(vi) grout prestress cables

A similar sequence will be employed for the next five stages, all of which will consist of three-quarters of one span plus one quarter of the adjacent span. Tendons for these stages will be coupled to the tendons stressed in the previous stages. Only the final and shortest stage will differ, consisting of the remaining three-quarters of Span 8.

### Girder segments

The girder will be divided into 115 precast segments, each of which will have the same external dimensions. These segments, except for those over the pier and at the abutments will be similar, the only variation being the web thickness. To accommodate the stressing and coupling anchorages the web will be thickened from the normal 410 mm to 850 mm at the stressing points. In addition, the web of the two segments adjacent to the last segment in each construction stage (the stressing segment), will be increased to an intermediate thickness of 630 mm.

These segments will vary in length from 2325 mm to 2445 mm while the bottom slab of the box will be 180 mm thick, the central section of the top slab will be 200 mm thick. The edge cantilevers will taper from 325 mm at the stem to 175 mm at the kerbs.

Diaphrams will be provided over the piers and abutments by making the pier segment and part of the abutment segment solid except for a 900 mm diameter access hole. The pier segment will be only 1295 mm long while the abutment segment will be 2.2 m long.

The girders will be stressed longitudinally by 12 tendons, six in each web. These tendons will consist of twenty-seven 12.7 mm diameter cable stressed to a force of 3750 kN.

The box will be reinforced transversely and vertically with structural grade deformed bar for local effects and shear.

The tendon profile for the longitudinal stressing will consist of a series of parab-

***The completed columns spanning the river and flood plain.***

olas, with a crest over the piers to resist negative moments and a sag in the main span for positive moments.

All the tendons will be located in the plane of the web centreline and will be spaced 150 mm apart, with two rows of three in each web. Near the anchorages they will be splayed apart to accommodate the large anchorage plates required. The transition to bring the tendons square on to the anchorage plates will involve reverse S curves with a minimum of 8 m radius.

### Bearing and expansion joints

A feature of this bridge is that it will be fixed at only one abutment, with sliding bearings at each pier and at the northern abutment. This will generate considerable horizontal force at the fixed abutment. Each of the two fixed bearings will have to take a maximum horizontal load of 160 tonnes whilst the vertical load will vary from a minimum of 90 tonnes to a maximum of 210 tonnes. Accordingly, this bearing had to be designed for horizontal load capacity rather than vertical load capacity. This resulted in a bearing with a vertical capacity of 600 tonnes, much greater than that required.

The sliding bearings on the piers will be 210 tonnes "pot" type bearings with a movement which will vary from 100 mm for the pier closest to the fixed abutment to 300 mm for the pier furthest away.

These bearings will be set to the 1.28% longitudinal slope of the bridge so that a horizontal friction force will be transferred to each pier.

The expansion joint will consist of cantilevered steel finger plates which will also allow for rotation between the deck and the abutment. This joint will allow movement of +75 mm and −250 mm to accommodate thermal movement and contraction due to shrinkage and creep.

### Materials

When completed the bridge will incorporate:

| | |
|---|---|
| Bored piles | 850 metres |
| Concrete in girders | 1280 m³ |
| Other concrete | 850 m³ |
| Reinforcing steel | 340 tonnes |
| Pestressing steel | 150 tonnes |

As mentioned earlier the piers, piles and pilecaps have been constructed by the Department's own forces. The superstructure will be constructed by Departmental contract over a period of approximately twelve months. ●

# FIFTY YEARS OF SERVICE

The year 1982 marks many milestones in road and bridge building in this State. On 19 March we celebrated, with great festivity, the golden jubilee of the Sydney Harbour Bridge. Exactly four months later on 19 July, we remembered the fiftieth anniversary of the opening of the unique 'double-decker' bridge at Grafton. (See articles in June issue of *Main Roads* and this issue p 110.)

It is quite fitting that the Department of Main Roads New South Wales is also having a fiftieth birthday this year. Although the actual birth took place on 29 December 1932 the events leading up to it really began with the economic depression of 1929.

### Depression measures

Despite the economic climate, the year 1929-30 had been a peak year for the Main Roads Board, as it was the first year in which full benefits were obtained from the reclassification of Main Roads into three groups (State Highways, Trunk Roads and Main Roads) with rates of assistance adjusted to their order of importance. As a result, expenditure was at its highest late in 1929 (reaching a maximum of £548,381 in October) and, thereafter, declined steadily with a matching drop in employment. In fact, the number of people employed directly by the Board dropped from just under 4,000 in January 1929 to just under 1,000 in April 1931.

From mid-1930 as works were completed, roadworkers were paid off and corresponding adjustments in other groups (such as timekeepers and cost clerks) became necessary. By September 1930, steps had to be taken to adjust the number of survey and design staff to the diminishing prospects of further construction. Metropolitan field survey and drawing office staff were accordingly rationed one week off in six until late June 1931.

Following the stoppage of payment of all Federal Aid moneys in April 1931, the administrative engineering staff in each country division was reduced.

Similarly, many assistant engineers, engineering draftsmen and tracers engaged on bridge design in Head Office (as well as surveyors and survey drafting staff in the Metropolitan Division) were either retrenched or rationed one day (or sometimes two) off per week. It was not until July 1931 that a major review of clerical staff was necessary, resulting in still more retrenchments and in further widespread rationing.

It had been the practice of the Board to engage unskilled labour through the State Labour Exchange nearest to the work. The number employed on unemployment relief works was at its highest (just over 2,000) in January 1929 but for the twelve months between October 1931 and September 1932 no unemployment relief works were undertaken, as even this avenue of assistance had to be curtailed.

Economically and industrially, the situation started to improve after mid-1932 and the numbers employed rose quickly to reach almost 3,000 by March 1933.

### State Transport (Co-ordination) Act, 1931

In the meantime, details of the new State Government's transport policy and an outline of the legislation soon to be introduced had been announced to the Labor Caucus by the Premier, Jack Lang, on 7 May 1931.

The scheme necessitated the passage of two bills through Parliament. The first would provide for the appointment of a Minister for Transport, a Chief Commissioner, and three Assistant Commissioners. This measure was intended to cover the transition period.

The second bill would co-ordinate the whole of the transport services to be ultimately controlled by the Minister and probably a sole Commissioner, with heads of departmental sections. When the second measure was passed by Parliament it was intended to dispose of the services of the members of the Railway Commission and the heads of other services which would be brought within the scope of the proposed new Act.

The first step was accomplished when the State Transport (Co-ordination) Act was passed in mid-August and made effective from 31 August 1931. This Act created a State Transport (Co-ordination) Board comprising the following four Commissioners: Mr. C. J. Goode (Chief Commissioner), Mr. C. A. Hodgson (formerly Chief Railway Traffic Manager), Mr. J. Fraser (formerly Chief Commissioner for Railways) and Alderman F. E. Miller (who had been secretary of the Amalgamated Road Transport Workers' Union for a number of years).

### Ministry of Transport Act, 1932

There was a strong public reaction to the proposed legislation. It was claimed that a Government monopoly of the transport system was not a solution and was incompatible with the need to co-ordinate the existing modes of transport. Nevertheless, the Lang Government continued with the Bill and the Ministry of Transport Act was assented to on 22 March 1932.

### Abolition of Main Roads Board

This Act repealed the Government Railways and Main Roads (Amendment) Act, 1931 and provided for the transfer to a new corporate body (the Board of Transport Commissioners of New South Wales) of the powers and functions previously exercised by the Main Roads Board. The Board, in fact, ceased to exist from 22 March 1932.

***Hon. J. T. Lang, M.L.A., Premier of New South Wales 1925-27 and 1930-32.***

***Hand hammers were standard equipment for breaking up the stones on the base course in the 1920s.***

Mr. C. J. Goode was appointed Chief Transport Commissioner and under him were seven other Commissioners each responsible for one of the following branches:

- The Way and Works Branch
- The Railway and Tramway Transportation Branch
- The Highway and Roads Transportation Branch
- The Power and Mechanical Branch
- The Commercial Branch
- The Finance Branch
- The Staff Branch
- The Secretary's Branch

All matters dealt with under the Main Roads Act became a responsibility of the Way and Works Branch of the newly-formed Department of Transport under the charge of Mr. A. C. Fewtrell as Transport Commissioner.

### New duties for Board members

Following the enactment of the State Transport (Co-ordination) Act in 1931, the administration of the Main Roads Act had been vested in the Colonial Treasurer, Jack Lang, by proclamation in the Government Gazette of 1 September 1931. In anticipation of further legislation to place the whole of the State's transport operations under the one authority, Lang made arrangements regarding the temporary re-appointment of the Members of the Main Roads Board (Messrs. J. Garlick, H. H. Newell and T. H. Upton).

On 1 July 1930, after an absence of two and a half years on special leave, Mr. J. Garlick had resumed his position as President of the Main Roads Board. Garlick's seven-year term of office was due to expire on 6 January 1932 and similarly, Newell was to retire as Member of the Board on 18 March 1932. Garlick was not re-appointed but, by the passage of the Government Railways and Main Roads (Amendment) Act in December 1931, Newell was appointed President of the Board and Upton continued as a Member until 31 December 1932.

After the passing of the Ministry of Transport Act, 1932, Newell was given a new appointment as Transport Commissioner and placed in charge of the Highway and Roads Transportation Branch of the Department of Transport. Upton was also employed by the Department of Transport from 28 March 1932 to 29 April 1932, to assist Commissioner Fewtrell in an advisory capacity in the administration of the Road Maintenance and Construction Section of the Way and Works Branch.

As Main and Developmental Road matters were to be combined with railway and tramway affairs in the Way and Works Branch, the divisional boundaries established by the Main Roads Board were changed. From 1 May 1932, the Board's previous seven divisions, with their headquarters located at Sydney (two offices), Queanbeyan, Wagga Wagga, Parkes, Tamworth and Glen Innes, were incorporated into six trans-

port districts, with headquarters at Sydney, Newcastle, Goulburn, Wagga Wagga, Bathurst and Tamworth.

In the short period that the new scheme operated, construction work practically ceased and maintenance of roads was delayed, trained staff were put on unfamiliar tasks and, under plea of co-ordination, men were moved all over the State.

### Political upheaval

Further difficulties developed between the Commonwealth and State Governments and at this time, on 1 February 1932, all Commonwealth payments to the State, including Federal Aid Roads payments, were suspended. It was suggested to the Colonial Treasurer that State Government revenue be used temporarily to continue the Federal Aid Works. The Colonial Treasurer approved this course and payments were made to the Federal Aid Roads Fund by transferring money from the County of Cumberland and Country Main Roads Funds, continuing until 7 June 1932, by which time a new State Government was in power and the problems between the two Governments had been resolved. The Commonwealth then paid the full amount due to the State under the Federal Aid Roads Agreement, up to 30 June 1932.

While the purpose of the Ministry of Transport Act, 1932, was to co-ordinate transport services and economise by eliminating competition (by having each of the seven Commissioners complementary to the others administratively), the creation of a large number of Commissioners under a Chief Commissioner caused bottleneck delays.

Early in May 1932, the Prime Minister (the Hon. J. A. Lyons, M.P.) successfully obtained the necessary legislation (in an action later upheld by the High Court) to garnishee all moneys standing to the credit of the New South Wales Government in all banks. Premier Lang countered by withdrawing State funds from the banks and lodging them in the Treasury building. He then directed that all State revenues were, in future, to be paid directly in cash to the Treasury and not through the banks. When the Commonwealth, by proclamation, ordered State officials to pay certain sums into the Commonwealth Bank, Lang hurriedly issued a circular instructing the officials to circumvent the order. Following this, the Governor of New South Wales, Sir Phillip Game, on Friday, 13 May 1932, dismissed the Premier from office.

### Restoration and re-organisation

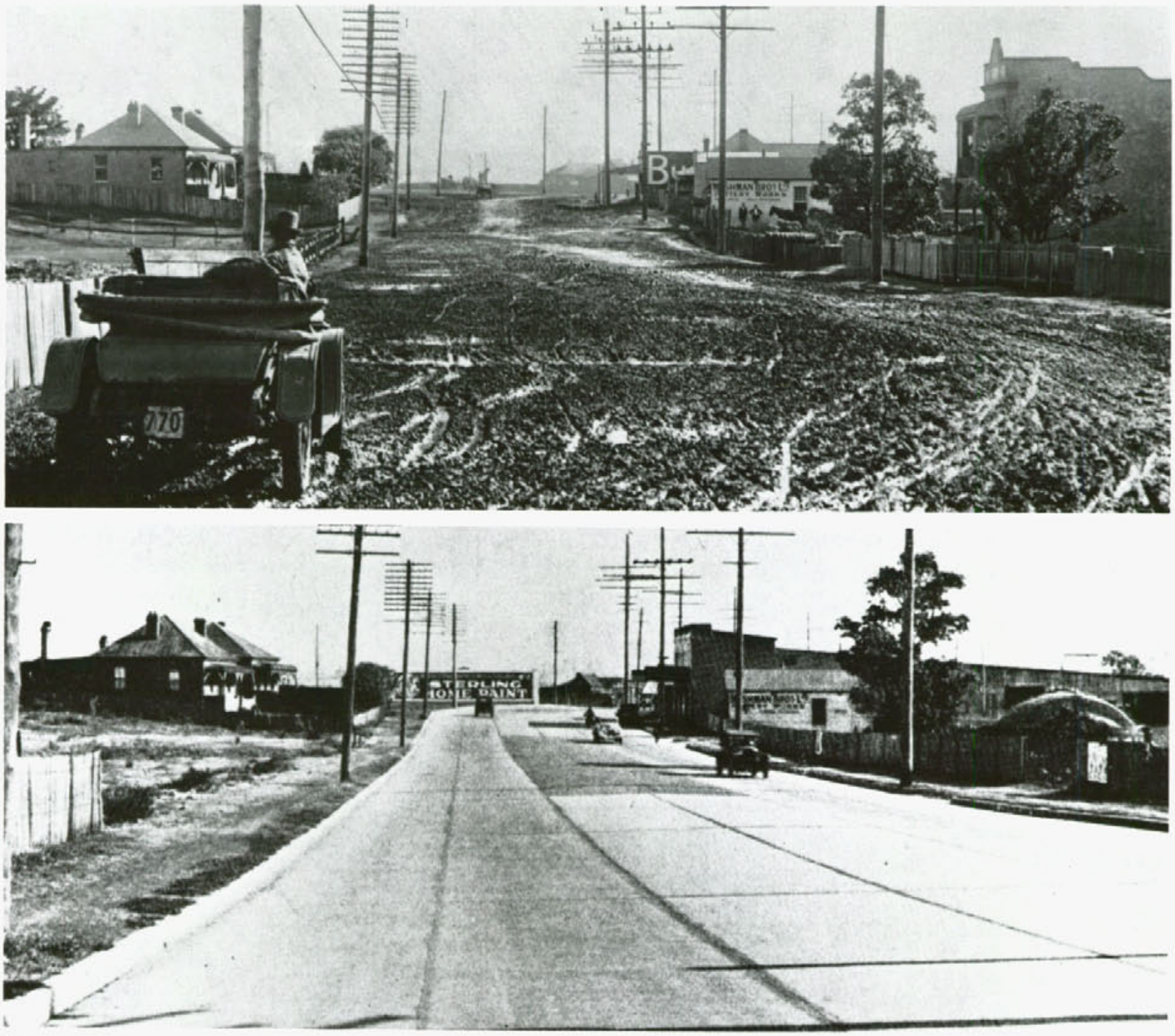
After the enforced election, the Stevens-Bruxner Government took office and Lt. Col. Bruxner again became responsible for the Main Roads Act, this time as Minister for Transport. It was recognised by the incoming Government that changes in the administration of the various aspects of transport were urgently required. As a preliminary measure, a proclamation was issued in the Government Gazette of 24 June 1932, whereby the administration of the Main Roads Act, 1924-1931, was transferred from the Way and Works Branch and, again, placed under the control of Newell. At the same time, the Board of Transport Commissioners, by resolution under Section 11 of the Ministry of Transport Act, vested Newell with the full powers of a Transport Commissioner in respect of the Main Roads Act. On 1 July 1932, Upton was again appointed in an advisory capacity by the Board of Transport Commissioners.

Arrangements were made (following S. A. Maddocks' appointment in August 1932 as Acting Transport Commissioner for Tramways and Road Transport) for Maddocks to take over the administration of road transport from Newell and thus leave Newell responsible solely for Main Roads.

### Transport (Division of Functions) Act, 1932

The Government introduced the Transport (Division of Functions) Bill into the Legislative Assembly on 22 September 1932, to provide for the creation of a Ministry of Transport under the Minister for Transport. Under the Act, the various transport agencies were grouped into three departments under a Commissioner for Railways, a Commissioner for Road Transport and Tramways, and a Commissioner for Main Roads. The Bill was assented to on 19 November 1932 and three Commissioners—one for each Department—Messrs. Cleary, Maddocks and Newell were appointed.

***New and old locations of a Main Road in the Dorrigo district, 1929.***



***The Great Western Highway (Parramatta Road) at Auburn after heavy rains in 1920, and the same location after reconstruction in 1935.***

The new arrangements, brought about by the passing of the Transport (Division of Functions) Act, 1932, were more suited to the efficient administration of transport matters than the previous proposals. The transport arrangements of the State at the time divided themselves naturally into three groups; railways, trams and buses, and main roads. Because of the distinct differences in the types of problems faced by each group, the separation of control allowed the responsible organisation to specialise in its field and the feeling of autonomy engendered by this separation provided more appropriate management in the years ahead.

### A fresh start

Starting off with a fresh new year in 1933, the first Commissioner for Main Roads, H. H. Newell, was determined to get the Department under his control settled into its work as quickly and as efficiently as possible. The staff of the previous Main Roads Board (many of whom had been dispersed to different duties while employed in the Department of Transport's Way and Works Branch) were reassembled and their duties confirmed or reorganised to best suit the functioning of the new and independent Department of Main Roads.

Some staff, previously retrenched, were employed again and the number of men engaged on unemployment relief works, which had commenced in October 1932, rose gradually to over 600 in March 1933. The total number of people employed by the Department almost tripled from approximately 1,000 in July 1932 to 2,860 in May 1933. Of this number, 1,575 were employed on the maintenance of roads and bridges, 1,150 on the construction of roads and bridges, 35 on surveys and 100 on the operation of ferries. After the instability of the previous few years, this was a period of increasing security and satisfaction for all staff and the lessening of job jeopardy was reflected in increased output.

. . . . .

It was in this way that the Department of Main Roads came into being in New South Wales. The culmination of fifty years has shown the Department's efforts to provide a safe and efficient road system and its response to community needs. It seems certain that the next fifty years will bring even greater achievements, and will continue to reflect the dedication of the Department's workforce. ●

# MAIN ROADS

A month to month account of the activities of
THE DEPARTMENT OF MAIN ROADS
NEW SOUTH WALES

Issued by and with the authority of the
Commissioner for Main Roads

Vol. IV, No. 5

January, 1933.


THE TRANSPORT (Division of Functions) Act, 1932, assented to on 19th November, 1932, was proclaimed in the *Government Gazette* of 29th December, 1932, to commence on that date.

Under that Act, the various transport agencies were grouped into three Departments, viz., Railways, Road Transport and Tramways, and Main Roads; and in the *Gazette* of 30th December, 1932 Messrs. H. H. Newell, M.Inst.C.E., M.I.E.Aust., and T. H. Upton, O.B.E., M.C.E., M.Inst.C.E., M.I.E.Aust., were appointed as Commissioner and Assistant Commissioner for Main Roads respectively.

Messrs. Newell and Upton were the engineering members of the original Main Roads Board which commenced to function at the beginning of 1925. From 3rd January, 1928, to 4th August, 1930, Mr. Newell acted as Deputy President of the Board during the absence on leave of Mr. J. Garlick as Civic and as Chief Civic Commissioner. Later, on the expiration of Mr. Garlick's term of office as President on 6th January, 1932, Mr. Newell was appointed under the Government Railways and Main Roads (Amendment) Act, 1931, as President of the Board, and on the abolition of that body, consequent upon the passage of the Ministry of Transport Act, 1932, was appointed on 23rd March, 1932, as Transport Commissioner in charge of the Highway and Roads Transportation Branch of the Department of Transport. Still later, by a resolution of the Board of Transport Commissioners under section 11 of the Ministry of Transport Act, the responsibilities of that body under the Main Roads Act were delegated to him. On the assumption by Mr. S. A. Maddocks of the duties of Acting Transport Commissioner in charge of Road Transport and Tramways, he relinquished control of road transport, confining his attention to main roads, in which connection he has now been established as the corporate authority.

Mr. Upton, who has been appointed as Assistant Commissioner for Main Roads, ceased service as a member of the Main Roads Board with the abolition of that body on 22nd March, 1932. From 28th March to 29th April, and from 1st July to 28th December, 1932, he was retained by the Board of Transport Commissioners in an advisory capacity, the bulk of the latter period being occupied in association, as the representative of the Minister for Transport, with the Transport Advisory Committee appointed by the Government to inquire into the use of motor omnibus transport in the metropolitan areas of Sydney and Newcastle, and which recently presented a comprehensive report reviewing the metropolitan transport position.

***T. H. Upton***

***H. H. Newell***

# OPENING OF CLARENCE RIVER BRIDGE AT GRAFTON—Part 2

The following selection of contemporary reports fills out the picture of the opening celebrations of the unusual double-decker bridge at Grafton in 1932.

*"The opening of the Clarence River Bridge on July 19 was an event of great importance, both nationally and locally. Its national importance lies in the fact that it closes the last gap in the interstate unified-gauge railway line linking the capitals of New South Wales and Queensland.*

*"As a district or local work it removes the last barrier to the free movement of rail and road traffic between the fertile North Coast areas that lie north and south of the Clarence, thus facilitating the interchange of products between this district and the principal marketing centres of two States."*

*"Another great link in the chain of communication in Australia was completed last week when the magnificent bridge across the Clarence River between Grafton and South Grafton was officially opened at midday on Tuesday by the Governor-General, Sir Isaac Isaacs. The bridge is built on the double-decker principle, and, although the railway section had been in use for some time, the portion for vehicle traffic was opened only at midnight on Tuesday amid scenes of great enthusiasm."*

*The Sydney Mail*, 27 July 1932

### First train crossing

*"The first train, a special passenger train chartered by the 'Back to Grafton' Week Celebrations Committee, consisting of 15 carriages and carrying 1700 people, was driven over the bridge on Saturday, May 7th, by the then Minister for Transport, Mr. (James) McGirr. It was the largest train that has ever been run in this State and weighed over 500 tons. On the following day, Sunday, May 8, the interstate expresses between Sydney and Brisbane crossed the structure."*

*The Sydney Mail*, 27 July 1932

The Grafton Daily Examiner gave a vivid and valuable record of the many activities associated with the opening of the bridge, as the following extracts from the 18, 19 and 20 July 1932 issues show.

### Station decorations

*"The railway stations at both Grafton and South Grafton, acting under instructions from the District Superintendent (Mr. Prentice), have been most artistically decorated with bunting, greenery and palms, which will help to give visitors a most favorable impression of the towns and the thoroughness with which they have prepared to welcome back old residents and visitors."*

### Sacred concert

*"The right note of thanksgiving and rejoicing was struck in the special services held at the churches yesterday. The foundation was thus fittingly laid for a splendid week and the inspiring singing of the combined church choirs yesterday afternoon, with their orchestral accompaniment, was equally appropriate to the occasion . . ."*

*". . . the fact that the spacious theatre (the Saraton), which is calculated to hold 1400 people, was crowded may be taken as a good augury for the popularity of the carnival festivities. A fine response was made by the singers in the different choirs, and Mr. Taffy Pritchard, the Cathedral organist, who was appointed conductor, had excellent material to work with and, with about 100 voices in well-balanced sections and a capable orchestra, oratorical music was presented yesterday afternoon in a manner which, for volume and effect, had probably never previously been heard in Grafton."*

### Governor-General arrives

*"The Governor-General of the Commonwealth, Sir Isaac Isaacs . . . will arrive this morning by the Brisbane express train from Sydney. His Excellency will be attended by his Military Secretary, Capt. L. S. Bracegirdle, his Aide de Camp, Lieut. E. A. D. Hill, and his valet. His official railway car will remain at the Grafton railway station.*

*"Upon arrival, his Excellency will be met by the Mayor of Grafton, Ald. B. C. Eggins, and the Mayor of South Grafton, Carl T. Schwinghammer.*

*"At 11.00 a.m. in the Town Hall, Grafton, a civic welcome will be extended to his Excellency by the two Mayors."*

### Civic reception

*"Much public interest was evinced in the civic reception . . . which was crowded by a most representative attendance, prominent residents from all parts of the Clarence River district being present. The Federal member for Cowper, Dr. Earl Page, and the member for Clarence in the State Parliament, Mr. A. S. Henry, were also in attendance, as well as Aldermen and officials of the two municipalities, and of the Clarence River County Council."*

### Gathering of pioneers

*"In the afternoon, the Governor-General was present at the 'Residents' and Pioneers' Conversazione' at the School of Arts, South Grafton (organised by the South Grafton branch of the Country Women's Association), after which his Excellency crossed the river and visited the Grafton bowling green, where he was entertained at afternoon tea by members of the Bowling Club.*

*"The C.W.A. are to be complimented on their foresight in arranging such a splendid entertainment of the pioneers, to whom the district owes so much. The hall was very attractively decorated, a good musical programme was rendered, some pithy speeches were made and the afternoon tea was much enjoyed.*

*"It was an impossible task to gather the names of all those present, but we no-*

*ticed Mr. Lollback, who has seen ninety summers slip by; Mrs. Owen Hynes, who has lived in the district 85 years. Then there were Mr. and Mrs. J. T. McKittrick and Mr. W. J. Hawthorne, three residents of South Grafton whose ages total nearly 250 years.*

*"Later in the afternoon, his Excellency, accompanied by Dr. Page, paid a visit to Mrs. Howard, who is in her 92nd year, and was the first white child born on the Clarence."*

### Children inspect bridge

*"Over 800 infant scholars of the Grafton and South Grafton Public and Convent Schools marched over the bridge yesterday afternoon in the charge of their teachers. They passed over the vehicular way and returned by the footway. Each child was presented with a souvenir button, the presentations being made by the Mayoress of Grafton (Mrs. B. C. Eggins), Mrs. C. H. McKenna, wife of the Deputy-Mayor, and Mrs. W. C. Sheather, wife of the Town Clerk on the north side, and by the Mayoress of South Grafton (Mrs. Carl Schwinghammer), Mrs. T. Agst, wife of the Deputy-Mayor, and Mrs. C. J. Beresford, wife of the Town Clerk, on the south side. The little ones thoroughly enjoyed their first visit to the bridge and several photographs were taken of them assembled on the structure."*

### Lighting switched on

*"There was an immense crowd on the upper deck of the bridge last night when at 7.15, Dr. Earl Page, M.H.R., performed the official ceremony of switching on the lighting scheme, which was followed by another switching on of the special lighting arrangements for the Queen of the Bridge carnival.*

*"The mayor of Grafton said . . . On Tuesday, November 25, 1924, the lights of Grafton were switched on by Dr. Page's mother, the late Mrs. Charles Page, and it was very fitting that they should have Dr. Page with them to switch on the lights on the bridge which he himself had worked so hard to achieve.*

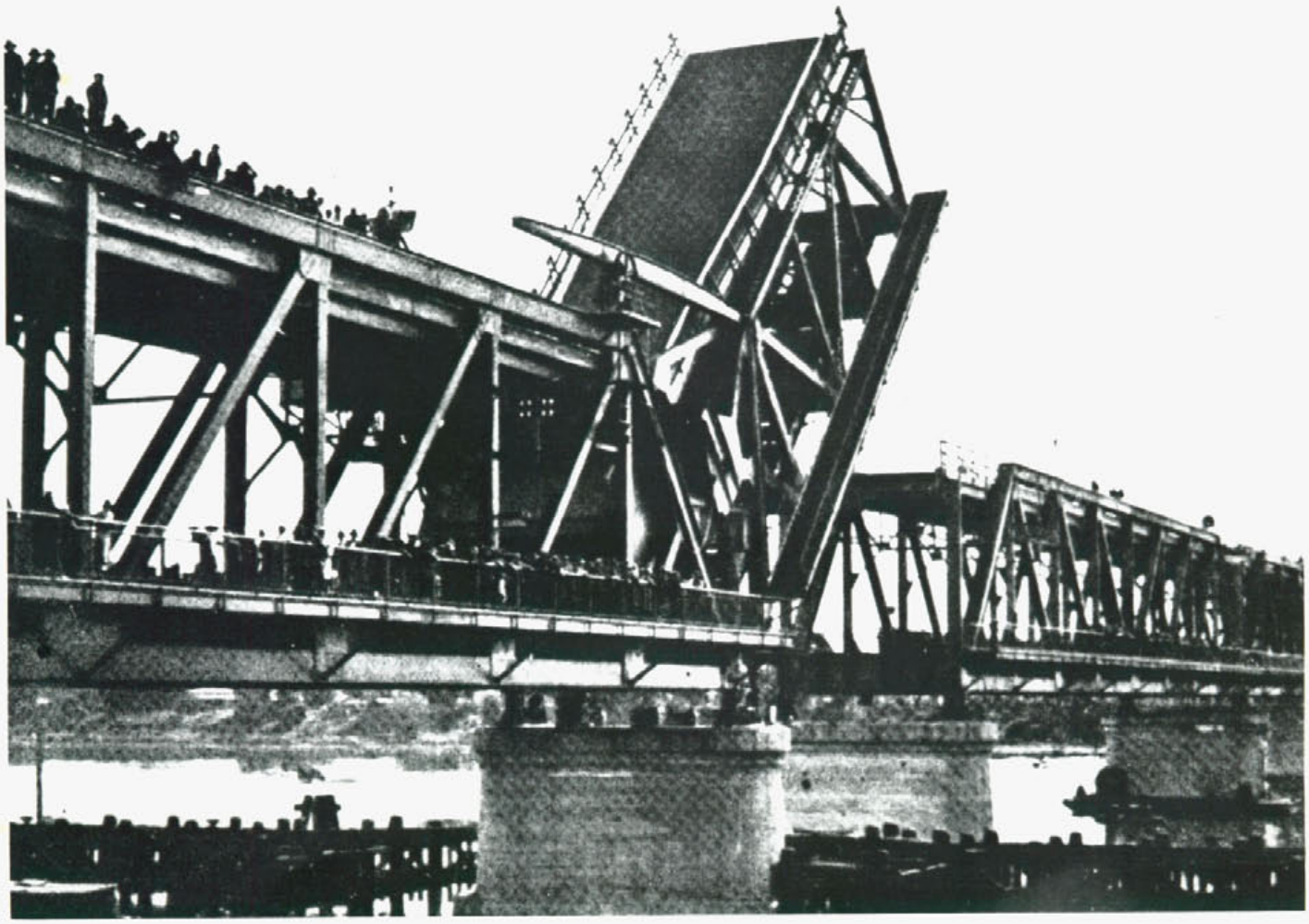
*"Mr. S. D. Webb, the constructing engineer, explained that the lighting was being provided by the municipal councils of Grafton and South Grafton and the installation of the lights had been carried out by the Clarence River County Council under the superintendence of Mr. N. V. S. Wilton.*

*"The lights were then switched on by Dr. Page, and, as indicated by the early official tests, a brilliant flood of light followed throughout the full length of the bridge. Dr. Earl Page, M.H.R., said the switching on of the electricity on this bridge would throw a flood of light upon this long neglected river and light a new pathway for the caravans of travellers and commerce that moved across the continent."*

### Short circuit

*"Just when thousands of people were entering into the carnival spirit following the switching on of the electric lights . . . they flickered and went out. Several times they made a brave effort to shed their rays over the convivial scene, but each time they were dimmed and finally went out, leaving the full moon to shed its welcome rays over the bridge and placid river. Twenty minutes later the lights came on again, the fault having been located in a transformer . . . at South Grafton, where the fuses had blown out, probably as the result of a short circuit.*

***Opening day crowds flanked both decks of the structure.***



*The carnival was not interfered with and was continued by the light of the moon until the lights came on again."*

### Carnival on bridge deck

*"Following the switching-on ceremony, the Bridge Gala Carnival was officially opened by Mr. A. S. Henry, M.L.A., by the turning on of the festoons of lights which had been erected for the special purpose of the carnival.*

*"The Mayor of Grafton . . . explained that the proceeds of all the celebrations were for charity and the committee had the special permission of the Transport Board to hold the carnival on the bridge . . .*

*"Townspeople and hundreds of visitors promenaded on the great structure and their 'first crossing' will long be remembered. Children of today . . . will pause to think of the scenes of their early life and their birthplace. To these Graftonians Monday, July 18, will ever be a great event.*

*"The big bridge was unofficially opened to pedestrian traffic for the first time under ideal weather conditions. King Carnival held sway near midstream. Here assembled enthusiastic supporters of the various 'Bridge Queens' with their spinning chocolate wheels and other attractions . . . Bright music provided by the Grafton and South Grafton Citizens' Band, resplendent in their new uniforms, and the Grafton Rhythm Boys' Orchestra in carnival attire, created the true carnival atmosphere."*

*The crowd was officially estimated at 5,500 and on the following night, Tuesday, the novelty of the bridge again attracted a huge crowd. So dense was the crowd that it was almost impossible to force one's way through the living mass. The Governor-General was present and took a lively interest in the proceedings.*

### A big day on the big river

*"Tremendous enthusiasm prevailed amongst the dense crowds which thronged the new bridge over the Clar-*

*ence at Grafton and those who took up coigns of vantage on Wilson's Hill on the south side of the river, when the Governor-General, Sir Isaac Isaacs, cut the ribbon yesterday and declared the bridge open.*

*"It was truly a red letter day for the district and probably never before have so many people been congregated in Grafton and South Grafton—the two places seem to be more like one big centre now.*

*"There were few local residents who failed to find a place in the vast concourse and all of the districts, both up and down the river, were well represented, while visitors were present from many other parts of New South Wales as well as from other states.*

*"The Commonwealth Government was represented by the Postmaster-General, Mr. J. E. Fenton, the State Cabinet by the Deputy Premier and Minister for Transport, Mr. M. F. Bruxner, and the Queensland Government by Mr. J. W. Davidson, Commissioner for Railways.*

*"The Mayor of Grafton (Ald. B. C. Eggins) and the Mayor of South Grafton (Ald. Carl T. Schwinghammer) took up positions on the dais, which was erected near to the bascule span, before 11 o'clock, and the officially invited visitors were accommodated with seats in front of the dais which was decorated with Union Jacks and flowers*

*"The Mayor of Grafton (Ald. B. C. Eggins) said they had met . . . to celebrate the completion of another step in the progress of this great commonwealth, and it was fitting that they should have present to perform the official opening the representative of his Majesty the King, in the person of the Governor-General of Australia.*

*"The Mayor of South Grafton (Ald. Carl T. Schwinghammer) said he felt proud of the position he occupied, for the reason that his father was Mayor when the first sod, in connection with the bridge, was*

*turned on Wilson's Hill in 1911, at which function Mr. W. A. Holman officiated.*

*"Referring to the bridge, he said it was a mass of concrete and steel, and was the first of its particular design in Australia, and probably in the world, but the most important factor to his mind was that it was entirely Australian made."*

Following a speech by the Postmaster-General, Mr. J. E. Fenton, the gathering was addressed by the State Minister for Transport, Mr. Michael Bruxner; the Federal Member, Dr. Earle Page, MHR; the local State Member, Mr. A. S. Henry, M.L.C.; Mr. J. H. Davidson, Chief Commissioner of the Queensland Railways; Mr. J. H. S. Angus, director of the Clyde Engineering Co and Mr. S. D. Webb, the resident engineer. Mr. Webb reported that:

*"Two spans and portion of the bascule span were erected at the works on special foundations, to test the accuracy of the workmanship and also the deflection of the loads, which they would be called upon to carry, and he was pleased to say that after inspection this work was found to be in every way efficient."*

## The bridge opened

The Mayor of Grafton then presented to the Governor-General a pair of gold scissors with which to cut the ribbon.

The Governor-General said the opening of this Clarence River Bridge was of outstanding importance whether they regarded it as a notable feat of engineering or as an event in the life history of a great, progressive people.

No person who looked attentively at the bridge could fail to be impressed with its design, its magnitude, its beauty, its stability and its strength.

His Excellency then cut the ribbon saying he had much pleasure in declaring open the Clarence River Bridge.

Then followed an outburst of enthusiastic cheering by the dense crowd, accompanied by a tumult of "cock crowing" by the sirens of river steamers.

At the conclusion of the ceremony the bascule span was lifted, and one of the aerial machines which had been flying over Grafton during the carnival was piloted through the passage, occasioning a thrill amongst the huge crowd of spectators. Shortly afterwards the N.C.S.N. Co.'s motorship *Melinga*, gaily decorated with bunting, passed through on her voyage to Sydney, and the cheering was renewed with vigor.

The proceedings were concluded by the playing of the National Anthem by the Grafton and South Grafton Citizens' Band.

*"It is estimated that the crowd present at yesterday's ceremonies totalled 14,000 to 16,000 people. Their behaviour was most exemplary and it is understood that the police were more than satisfied with their orderliness."*

## Citizens' dinner

*"After the ceremony of opening the bridge had concluded, and the procession had passed through South Grafton, the dinner tendered by the citizens to his Excellency, the Governor-General and other visitors took place at the School of Arts."*

## The procession

*"The procession which wended its way through Grafton, across the bridge and through the streets of South Grafton, was the finest display that has ever been seen in this district.*

*"For variety and interest, though not perhaps in the artistic finish, vied with that presented at the opening of the Harbour Bridge.*

*"It was a triumph of organisation and co-operation and a credit indeed to the organiser, Mrs. Alda Orr Morris, who had spared no effort to achieve success, as well as to the hundreds of people who arranged the various displays which presented a magnificent mirror of the district and its progress through the years.*

*"Rapidly increasing in density as the morning wore on, the crowds thronged into every niche and corner and very few vantage points were unoccupied over a long processional route.*

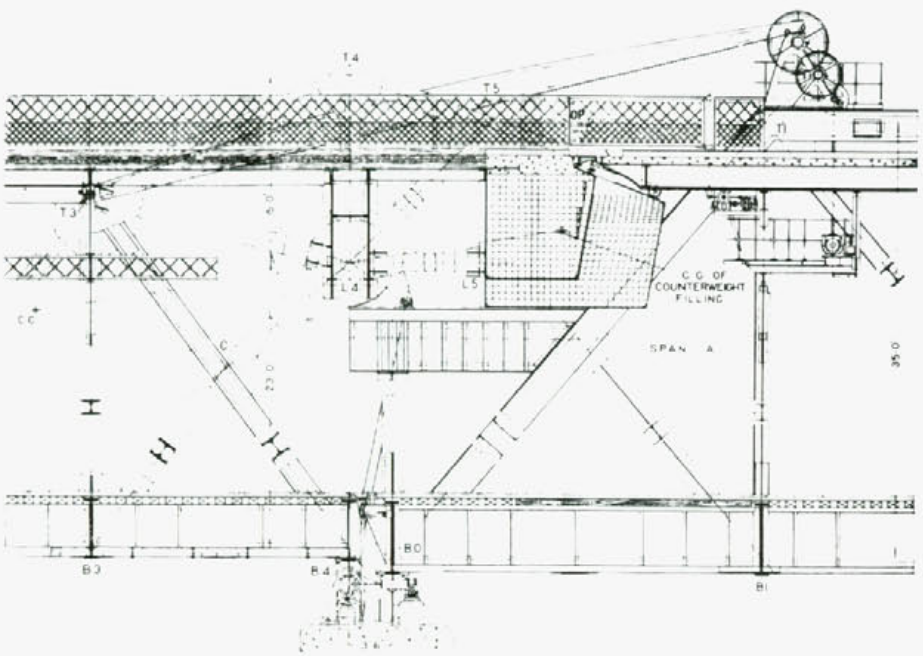
*"Hotel balconies and upper stories of many business premises were filled with interested onlookers, but outside of Prince Street, every home appeared to be deserted.*

*"Youthful Australia, as depicted in the sturdy bodies and bright faces of the sons and daughters of Clarence River residents and the charming bevies of beautiful girls in carnival attire, was an effective remedy for pessimism.*

*"Many of the 2000 school children were sons and daughters of the returned soldiers, whose participation in the procession was characteristic of their unswerving loyalty to their country and their own district."*

Following the marching diggers was a car containing disabled men.

*"The grand pageant, as it wended its way beneath gay bunting and flags flying from housetops, shops and public buildings, was headed by mounted police and then came the khaki-clad Light Horsemen*




***Elevation detail of the bascule truss span.***

***The Governor-General, Sir Isaac Isaacs, performing the opening ceremony.***

*under the command of Lieut. F. L. Clavan, M.M.*

*"The sound of horses' hooves faded and all eyes centred upon the Grafton and South Grafton Permanent Citizens' Band.*

*"Heading the bandsmen was the diminutive drum major, Master Ronald Orr, immaculate in white and gold braided uniform.*

*"Then came the heroes of 1914-18 in swinging stride and next in order were 100 boy scouts, wolf cubs and rovers.*

*"Especially interesting was the float containing a replica of Ogilvie's bark hut at Yulgilbar back in 1841 when thoughts of a mighty iron and concrete structure over the river at Grafton were not entertained."*

## Queen of the bridge

*On Friday, July 22, 1932, a huge crowd gathered in Grafton's Fisher Park to witness the crowning of Miss D. ("Toodge") Turner as Queen of the Bridge.*

The ceremony was performed by the Archbishop of Bridgeland, a role admirably enacted by Mr. George Urquhart.

*"The crowning ceremony, which was witnessed by probably the largest crowd ever seen on the park, was carried out with pomp and dignity befitting the occasion, and when crowned, 'her majesty', a charming figure in white mariette, with scarlet and ermine robe, was enthusiastically greeted by thousands of local subjects."*

## Fifty years later celebrating again

On Monday, 19 July, 1982, the Grafton Daily Examiner again recorded a "day to remember". It said . . .

*"A day of tremendous community spirit, with visitors from all over Australia joining townsfolk marked the celebrations of the 50th anniversary of the opening of the Clarence River Bridge at Grafton yesterday morning.*

*"A brief ceremony at the southern approaches of the bridge followed the procession. The speeches were amplified to what must be the biggest open air audience ever witnessed on Wilson's Hill at South Grafton.*

*"People crammed into Earle Page Park, spilling over to saturation point on Riverside Drive, encroached upon Bent Street, with thousands of walkers milling about on the roadway and footways of the bridge itself.*

*"Grafton Mayor Bob Liddiard said the day was a reflection of what had happened in 1932, and indeed, what had happened in the 50 years since.*

*"Ald. Liddiard said to echo the words of Sir Isaac Isaacs, 'much still had to be done', pointing out that today 18,500 vehicles a day crossed the bridge with 70 train movements.*

*"Deputy Chief Executive of the State Rail Authority, Mr. R. D. Christie, offered congratulations to all who had been involved in the many aspects of so wonderful a day.*

*"Mr. D. C. Jacob represented the Commissioner at this function and pointed out how Grafton Bridge and Sydney Harbour Bridge 'both serve road transport and rail transport, both have united their own communities and both were designed so that today they still serve adequately present day traffic'.*

• • •

*"Nostalgia, band music, the beat of drums, the participation of youth, and imaginative design of floats, lifted the Grafton Bridge Jubilee Procession into a memorable one, full of Interest for the thousands who lined the route.*

*"Some 80 groups took part, with about 1500 individuals within the groups. They ranged from babes in arms through to veterans of the 15th Light Horse Regiment.*

*"The Light Horse contingent drew spontaneous applause as the mounted men, many in full uniforms, led the procession as they had on the day of the original opening.*

• • •

*"After the procession, hundreds upon hundreds of men, women, children and toddlers took the rare chance to walk across the roadway on top of the bridge.*

*"It was a great day for Grafton, one to be remembered for a long time. It was also a great day for community spirit. It is rare indeed to see so many people out together enjoying the delightful features of our city."*

• • •

*The Department was pleased to have been associated with this anniversary, and the presentation with the State Rail Authority of a display of photographs in the Grafton Civic Centre.* ●

# PIONEERS FOR THE PAST

## Joint DMR/National Trust Bridge Group

The construction and maintenance of roads and bridges are formidable tasks in themselves, yet the work of the Department extends beyond these to such fields as the conservation of industrial archaeology.

An informal discussion committee was established in 1980, comprising representatives of the National Trust Industrial Archaeology Committee and senior Departmental engineers. The encounter proved to be so successful that the committee continues to meet regularly to discuss Departmental proposals that affect historic bridges in New South Wales.

It was found that exchanging ideas and information at the early planning stages of a project is of great benefit to both parties, and helps each to understand the other's objectives.

A case in point is the old Maldon Bridge near Picton on Trunk Road No. 95. Opened to traffic in 1903, this bridge is one of the three remaining suspension bridges in New South Wales. The original timber towers were badly damaged by a bushfire in 1939 and were replaced by steel towers.

When the new Maldon Bridge was opened in April 1980, the fate of the older structure came under discussion. Eventually, a Trust was established under the guidance of Wollondilly Shire Council to maintain and manage the historic bridge as an access to a picnic ground. Equal contributions have been made toward the Trust Fund by the Department and, in response to a recommendation by the National Trust, the N.S.W. Heritage Council.

***Above: a meeting of the Bridges Committee: (left to right) Maree Humphrey, Bridge Section; Tony Brassil; Colin Crisp; Sue Clarke; Wal Whittaker; Vince O'Grady, Chief Engineer (Planning); Brian Pearson, Chief Engineer (Bridges); Judy Birmingham; and Peter Wolfe, Bridge Engineer (Operations). Below: the Dunolly Bridge over the Hunter River on the New England Highway, with its unusual cast iron cylinder piers.***

Similarly, the Department and the National Trust have discussed the future of the Dunolly Bridge over the Hunter River at Singleton on the New England Highway. Built in 1905, this bridge has two steel trusses supported by cast iron cylinder piers. After nearly 80 years of weathering traffic and floods, a replacement structure became necessary. However, the interesting old bridge will not be demolished, but will be retained by Singleton Shire Council as a subsidiary crossing to the new bridge. (A very old and very large fig tree, affected by the new bridge proposals, was not so fortunate. Alternative bridge locations were considered but these were unsatisfactory and the tree was removed by council in July.)

At the committee's meetings the Department has also drawn to the attention of the National Trust some bridges of which the Trust was unaware, and has supplied technical and historical information for inclusion in the Trust Register.

Following the success of the Bridges Committee, other committees and advisory panels have been set up by the National Trust with the New South Wales State Rail Authority to consider proposals affecting structures of heritage value. ●

**ABSTRACT and CONCRETE**

**The sweeping curves of the F3—North Western Freeway are a recent addition to Sydney's urban landscape.**

**The piers of the eastbound viaduct are here shown reflected in the waters of Darling Harbour.**

# Victoria Pass Sesquicentenary

The section of the Great Western Highway known as Victoria Pass celebrated its sesquicentenary in October this year. A brief history of this crucial piece of roadwork follows.

Following the first successful crossing of the Blue Mountains in May, 1813 by Blaxland, Lawson and Wentworth, Governor Macquarie sent Assistant Surveyor George Evans to investigate the planned route for a new and vital road westward.

Upon Evans' return and subsequent report, agriculturalist William Cox volunteered his services to supervise construction of the road and gathered together a group of men with a wide variety of skills.

The road was commenced on 18 July 1814, by cutting an approach to Emu Ford down the eastern bank of the Nepean River and was completed on 14 January 1815, as far as the site of Bathurst. Even though the 162 km road was barely a 4 m wide bush track, it was a triumph for Cox and his men. When constructed, the road had sections with a grade of 1 in 4, an incline so steep that it provoked feelings of awe in the hearts of many early travellers.

Cox's road soon fell into a state of disrepair and was abandoned west of Mount York from 1827 in favour of a route credited to Lawson.

### Mitchell's arrival

By this stage Major Thomas Mitchell had arrived in Sydney, preceded by his reputation for excellence in the fields of survey and topographical work during the Peninsular War against Napoleon.

On 29 November 1827 Mitchell, as Assistant Surveyor-General, submitted to the Colonial Secretary a report suggesting a new location which passed by Colletts Inn. This line was adopted and by 1829 work had commenced under Major Edmund Lockyer. The route was generally referred to as Lockyer's Line. During construction a landslide occurred, completely blocking part of the road. It appears that little was done to clear the road and instead Mitchell, now the Surveyor-General, put in hand plans for a road down the Victoria Pass. Mitchell found that a grade of 1 in 15 could be maintained down Mount Victoria into the Vale of Clwydd, compared with a maximum grade of 1 in 4 down Mount York.

Mitchell regarded this deviation as so important that he commenced work immediately without informing his superiors, much to the chagrin of Governor Ralph Darling. The main cause of the Governor's annoyance was that much labour and money had already been spent on the Mount York route.

***Governor Richard Bourke***

### Administrative tension

The Colonial Secretary advised Mitchell that future efforts should be concentrated on the Mount York line. His letter to Mitchell contained the injunction *"I am accordingly directed to request that you will understand that the line of descent from Mount York to Colletts now in progress, is to be completed, and that the line proposed by you is not to be adopted or commenced"*.

It was also stated that even if certain roads had features which were undesirable, it was better to tolerate them rather than incur the additional expense of starting new lines. An angry exchange of letters took place, and Mitchell resolved to resign rather than forego his desire to prove that he had found a better descent of the mountains.

Mitchell stormed *"I defy any man ever to point out any material improvement in the lines laid down by me, for they have been marked only after a more careful survey of the ground than is made for such purpose even in Europe"*, and *"I cannot conscientiously sit down in Sydney and pocket that salary without caring whether roads are made right or wrong"*.

Mitchell eventually won his point and the Governor permitted him to build the Victoria Pass, official approval being given on 2 September 1830. The work was declared open by Governor Richard Bourke on his passage to Bathurst on 23 October 1832.

### Early travellers

First to travel the new pass were the pioneer settlers with their bullock drays, sheep and cattle. Mail services and other traffic increased, and by the 1860s Cobb and Co. were running well-sprung coaches across the mountains and through the pass.

It was normal practice to ask passengers to leave the coach and walk for the steepest section. It is said that in 1861 a man refused to walk, insisting that he had paid his fare to ride in the coach. Other passengers followed his example. The coach overturned, leaving the road at Horseshoe Bend, killing one passenger and severely injuring several others.

The extension of the railway westward triggered off the development of the Blue Mountains as a holiday resort. The large hotels built for holiday makers brought a new type of traveller to view and marvel at the road built by Mitchell and his men.

Motorised vehicles initially had a harder time of negotiating the pass than did their horse-drawn counterparts. In fact, many early vehicles had to be pulled up the pass by literal horse power. By 1907 a group of car enthusiasts took action to find a route with a more negotiable

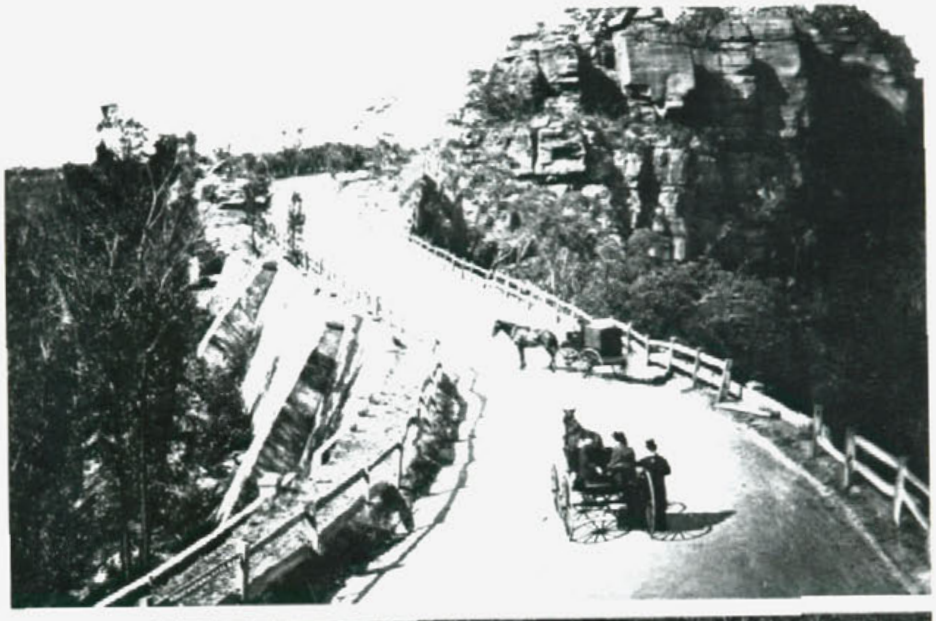
grade. A deviation known as Berghofers Pass was built on an easier grade for the underpowered vehicles. This deviation remained in use from 1912 until 1920, when Victoria Pass was upgraded and brought back into use. The subsequent increase in performance for most vehicles meant that the passage of Victoria Pass was no longer an embarrassing venture. However, boiling radiators and missed gear changes continued to cause frayed tempers for some time.

The following contemporary accounts provide us with further details of the construction of Victoria Pass and two early journeys across the Blue Mountains.

The first is from J. Maclehose, *Picture of Sydney and Strangers Guide, 1838.*

*"The first task for the poor creatures, who were here employed both in 'summer's heat and winter's cold', was to fell, roll off, or clear by burning, through the wood of the projected line of road, under the direction of their overseers . . . worked, too, in fetters, connected from one ankle to the other, weighing from seven to ten pounds, and guarded to, at, and from, their labours, by military . . . The Surveyor-General, however, alleged, that with a force of 250 men, the whole line of road from Mount Victoria to Bathurst might be opened to the public in two years from the date of its commencement. In this estimate, experience has shown that the Surveyor-General, however accurate in other matters, found himself much disappointed, as it occupied more than that time, with a greatly* increased number of men, to render *Mount Victoria accessible even for a foot passenger, which considering that a goat or wolloby* (sic) *could scarce obtain foothold over such a precipice, we are not surprised to find that his opinion, in this instance, had been drawn something after the shape of the mountain itself,* very precipitous.

He continued, "*. . . not less busy were a portion of* (men) *employed in the extreme depths of the ravines below: these were excavating for the foundation of the walls intended to connect one precipice with another, so that the road might be made of one continuous and gradual scale of declivity over the deep chasm . . . .*"




***Above: the Pass in the late 1800s: early journeys to Bathurst often took as long as four weeks. Left: a stone engraving thought to have been made by a convict labourer.***

The second, an early account of a journey through Victoria Pass, was told by Charles Darwin in *Voyage of the Beagle.*

*17 January 1836*

*Having crossed a low piece of land on the opposite side* (of the Nepean), *we reached the slope of the Blue Mountains.*

**The sesquicentenary of Victoria Pass was celebrated on 23 October 1982 with period costume parades and festivities.**

**A. H. Fullwood's Bridge over the Victoria Pass, 1892.**

*The ascent is not steep, the road having been cut with much care on the side of a sandstone cliff . . . .*

*"In the middle of the day we baited our horses at a little inn, called the Weatherboard. The country here is elevated 2,800 feet above the sea. About a mile and a half from this place there is a view exceedingly well worth visiting . . . If we imagine a winding harbour, with its deep water surrounded by bold cliff-like shores, to be laid dry, and a forest to spring up on its sandy bottom, we should then have the appearance and structure here exhibited. This kind of view was to me quite novel, and extremely magnificent.*

*Soon after leaving the Blackheath, we descended from the sandstone platform by the pass of Mount Victoria. To effect this pass, an enormous quantity of stone has been cut through; the design, and its manner of execution, being worthy of any line of road in England . . . .*

*I commenced my return* (from Bathurst), *and followed a new road called Lockyer's Line, along which the country is rather more hilly and picturesque. This was a long day's ride; and the house where I wished to sleep was some way off the road, and not easily found . . . .*

*"Before noon* (the next day) *we joined our former road, and ascended Mount Victoria . . . on the road to Sydney I spent a very pleasant evening with Captain King at Dunheved; and thus ended my little excursion in the colony of New South Wales."*

An entertaining extract from *A journey from Sydney to Bathurst*, written by Sophia Stanger in 1841 completes the scene.

*"The roads over the mountains were in a fearful state. Miles of deep sands, caused by the breaking up of the soft freestone, over which the drays ploughed their course, up to the axletree, very little provision having been made to carry off the water. At other parts, the rocks were harder, and the water had washed away the soft portions of the soil and left boulders standing 2 feet or 2 feet 6 inches higher than the road level. Over these the nine, thirteen, or more bullocks would pull and flounder, often causing the shaft bullock to fall down, the weight of the load thrown entirely on the poor animal. When all the amount of whipping, shouting and swearing would fail to make the bullock get up and the numerous dogs which always accompanied the teams were set upon the shafter, then with a trememdous bellow the poor brute would rise again to his feet; sometimes before many miles had been traversed they had to go through the same process several times. The time occupied in travelling between Sydney and Bathurst by these conveyances was usually four weeks, sometimes longer."*

The same article considered *"notwithstanding all that has been done to mend them, they remain, like Bunyan's 'Slough of Despond', very little the better"*

Mitchell's relocation of the western descent of the Blue Mountains through Victoria Pass, was one of the first of many improvements made to this vital route. Consequently, one and a half centuries later, the road across the mountains is a far cry from being a slough of despond. In terms of time alone, the journey from Sydney to Bathurst today takes less than four hours. ●

# A LIVING MEMORIAL

In 1952, the Garden Club of Australia suggested that a Remembrance Driveway be established as a living memorial to members of the Australian Armed Forces. Their proposal received general support and a Committee was set up under the Chairmanship of Lieutenant-General Sir Frank Berryman.

The scheme was inaugurated in 1954 when Her Majesty The Queen and His Royal Highness The Duke of Edinburgh each planted a Plane tree in Macquarie Place, Sydney. Her Majesty The Queen also planted a Snow Gum tree adjacent to the War Memorial in Canberra to mark the finishing point of the Driveway.

A public appeal for financial support was launched in December 1954 and met with considerable interest from various Government and Local Government authorities, industrial and business houses, banking institutions and private individuals.

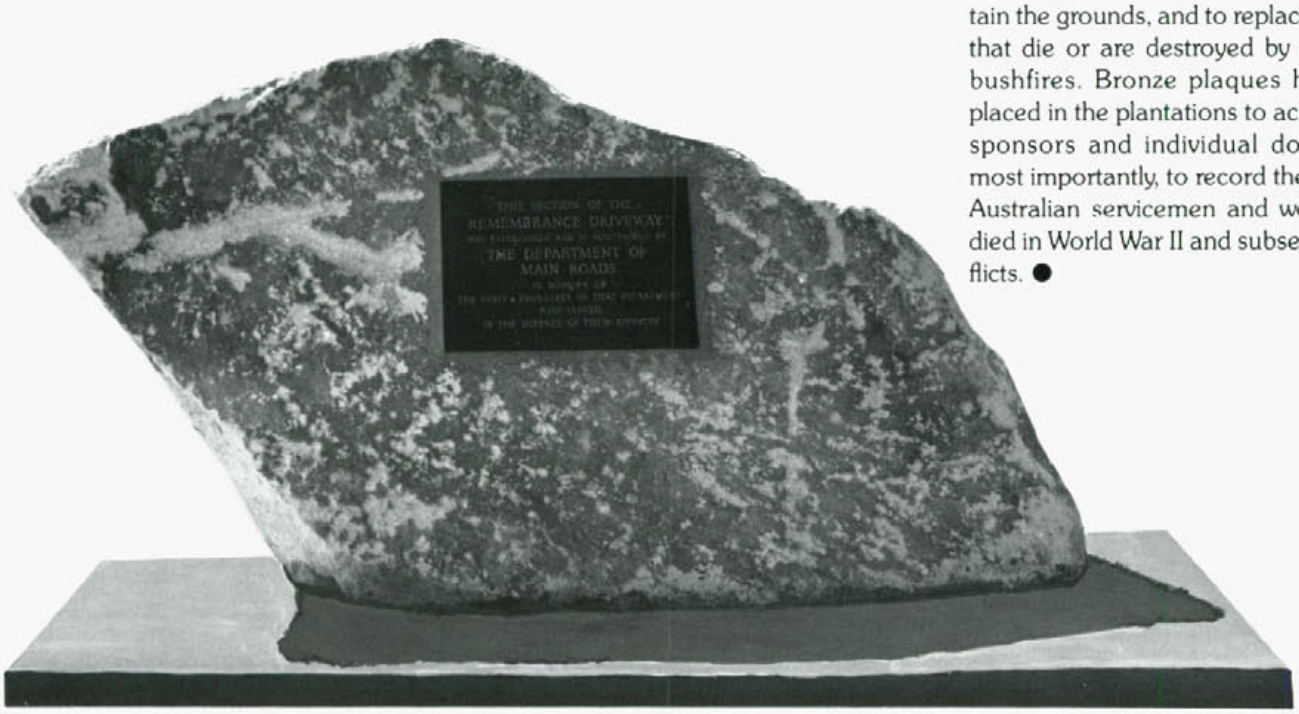
In the following year, the first five areas of land were dedicated for the Driveway, three at Lake George and one each at Paddys River and Yarra.

Today, the 307 km distance between Sydney and Canberra comprises 50 plantations, 46 within New South Wales and 4 within the Australian Capital Territory.

Groves of various types of trees (eucalypt, spotted and blue gums, cherries, firs and oaks) have been planted at approximately 50 km intervals, as it was found that continuous avenues of regularly spaced trees tended to be monotonous and were a potential driving hazard.

Most of the land in New South Wales on which plantations are situated is proclaimed as Public Reserve, and is vested in the Commissioner for Main Roads and maintained by the Department. In the Australian Capital Territory all plantations are maintained by the City Parks Administration of the Department of Capital Territory.

Remaining funds of the Remembrance Driveway Committee are used to maintain the grounds, and to replace any trees that die or are destroyed by disease or bushfires. Bronze plaques have been placed in the plantations to acknowledge sponsors and individual donors and, most importantly, to record the names of Australian servicemen and women who died in World War II and subsequent conflicts. ●



# NEW CARRIAGEWAY OVER FIRST MOONBI RANGE

On 4 August 1982 the new northbound carriageway of the New England Highway over the First Moonbi Range was opened to traffic. The first stage of the work, which consisted of the new southbound carriageway, was opened to traffic on 12 June 1980.

***The new northbound carriageway over the First Moonbi Range, at left, was opened to traffic on 4 August 1982.***

Roadworks commenced in May 1975 and were undertaken by the Department's direct control workforce based at the South Tamworth Works Office.

The new roadway generally provides two separate carriageways 11.6 metres wide, each with two 3.7 metre wide travelling lanes, an outside shoulder 3 metres wide and an inside shoulder 1.2 metres wide. The shoulders have been sealed over their full width in order to prevent scour on the steep grades and to improve safety for traffic.

The new route replaces a steep and poorly aligned section of three lane highway.

Three large box culverts were constructed as part of this route. These were a three cell box culvert 2.4 m square and 52 metres long at Moonbi Creek; a two cell 3.05 m x 2.44 m box culvert 6.2 metres long, as an extension to the bridge at Laheys Creek; and a two cell box culvert 2.4 m square and 30 metres long over an unnamed creek.

Two bridge-sized structures were also built. These were a four cell 3 m x 2.2 m structure 30.3 metres long at Laheys Creek and a three cell 2.9 m x 2.4 m structure 17.3 metres long over an unnamed creek.

Approximately 2.1 km of pipe culverts were laid as part of this work. In all some 1230 cubic metres of concrete were used in the drainage structures and culverts. The major structures were designed for 100 year frequency flooding and the minor structures for 20 year frequency flooding.

A total of 182 000 $m^3$ of granite was removed from cuttings. The single largest cutting involved the removal of 12 000 $m^3$ of earth and 82 000 $m^3$ of rock and was 20 metres deep. The largest fill required 98 000 $m^3$ of compacted material.

To remove the granite from the cuttings, a total length of 150 000 metres of drilling was required. The blasting work which followed involved the use of 100 tonnes of ammonium nitrate and fuel oil mix plus gelignite boosting charges.

The total area of new pavement provided is approximately 110 000 square metres.

This work has greatly improved the passage of what was once a steep and difficult route over the First Moonbi Range. The average gradient on the new work is 5%. The maximum grades are 9.6% uphill for 600 metres on the northbound carriageway and 9.4% downhill for 725 metres on the southbound carriageway.

It has been necessary to impose a 60 km/h truck speed zone over a short section of the new southbound carriageway. This extends from 26.1 km to 27.7 km north of Tamworth and includes the downhill section with a gradient of 9.4%. A radar speed check indicated that many trucks were travelling in excess of the 80 km/h limit and some of these in excess of 100 km/h. Following a number of truck accidents it was decided to impose the 60 km/h limit.

When work was commenced in 1976 the estimated cost for the project was $3.5 million. However, increasing costs and charges over the intervening years have caused the final estimate to rise to $6.4 million. Yet the new section of roadworks is a valuable asset to this region in northern New South Wales. It provides a vastly improved level of service and safety for traffic travelling the New England Highway.

## Statement of Receipts and Payments for the Year Ended 30 June 1982

| | County of Cumberland Fund $ |
|---|---|
| **Receipts** | |
| ***State Sources*** | |
| Motor vehicle registration weight tax and tax levy | 58,760,558 |
| Motor vehicle registration fee—allocation from the Road Transport and Traffic Fund | |
| Loans: from State General Loan Account | 4,000,000 |
| raised by the Commissioner under semi-government loan allocation | 26,900,000 |
| raised by the Traffic Authority under semi-government loan allocation | |
| from Department's reserve for loan repayments | 5,000,000 |
| Leveraged lease finance | |
| Road tolls (less collection costs) | 7,173,214 |
| Interest: on sinking fund investments | 3,950,282 |
| on treasury fund balances | 335,247 |
| Contributions for specified works: from other departments | 92,633Dr |
| from other sources | 1,524,047 |
| Rents from properties acquired for works (less collection and maintenance costs) | 2,109,198 |
| Natural disasters—grants for restoration works | |
| Miscellaneous | 675,973 |
| ***Total State Sources*** | ***110,335,886*** |
| ***Commonwealth Grants*** | |
| For National Roads | |
| For Arterial Roads | 53,000,000 |
| For Local Roads | |
| For Planning and Research | |
| ***Total Commonwealth Grants*** | ***53,000,000*** |
| **Total Receipts** | **163,335,886** |
| Cash at Treasury as at 1 July 1981 | 3,730,320 |
| **Total Funds Available** | **167,066,206** |
| **Payments** | |
| *State Road System:* construction and reconstruction | 67,508,904 |
| property acquisitions (less proceeds of sales) | 26,753,704 |
| maintenance and minor improvements | 23,322,463 |
| natural disasters—restoration works | |
| *Local Roads:* construction and maintenance | |
| natural disasters—restoration works | |
| *Intersection Improvements, Traffic Signals, Signs and Road Marking:* | |
| Construction and reconstruction | |
| Maintenance and operations | |
| *Land and Buildings:* for works operations | 1,056,774 |
| for administration | 12,882 |
| Net transactions of operating and suspense accounts | 1,941,376 |
| General administration | 6,969,666 |
| Research | 2,150,661 |
| Loan charges: repayable Treasury advances—interest | 603,579 |
| general loan account—interest and management expenses | 7,332,200 |
| loans raised by the Commissioner—interest and management expenses | 13,564,148 |
| *Sub-total* | *151,216,357* |
| Loan repayments: repayable Treasury advances—principal | 273,682 |
| general loan account—sinking fund | 982,000 |
| loans raised by the Commissioner—principal | 2,394,893 |
| Investments for loan repayments for loans raised by the Commissioner | 7,329,160 |
| **Total Payments** | **162,196,092** |
| Net transactions of trust accounts | 133,274Cr. |
| Cash at Treasury as at 30 June 1982: for general purposes | 1,326,793 |
| for trust accounts | 3,676,595 |
| | **167,066,206** |

| Country Fund $ | Commonwealth Fund $ | Traffic Facilities (Note 1) $ | Sydney Harbour Bridge Accounts $ | Total 1981–82 $ | Total 1980–81 $ |
|---|---|---|---|---|---|
| 153,860,435 | | 13,825,000 | | 226,445,993 | 182,404,821 |
| | | 18,374,425 | | 18,374,425 | 18,503,622 |
| | | | | 4,000,000 | 10,000,000 |
| 56,000,000 | | | | 82,900,000 | 85,125,040 |
| | | 1,200,000 | | 1,200,000 | |
| 4,000,000 | | | | 9,000,000 | 15,000,000 |
| 7,800,000 | | | | 7,800,000 | |
| 501,867Dr. | | 2,667,891 | 1,624,111 | 10,963,349 | 10,916,890 |
| 559,126 | | | 727,424 | 5,236,832 | 3,943,786 |
| 767,269 | | | 290,078 | 1,392,594 | 1,858,503 |
| 1,908,136 | | 460,019 | 637,735 | 2,913,257 | 2,954,643 |
| 326,796 | | 653,261 | | 2,504,104 | 1,481,565 |
| 203,647 | | | 330,898 | 2,643,743 | 2,575,609 |
| | | | | | 569,188 |
| 1,656,760 | | | | 2,332,733 | 2,306,872 |
| ***226,580,302*** | | ***37,180,596*** | ***3,610,246*** | ***377,707,030*** | ***337,640,539*** |
| | 101,616,862 | 1,949,138 | | 103,566,000 | 94,948,000 |
| 11,503,000 | | | | 64,503,000 | 59,136,000 |
| | 46,267,000 | | | 46,267,000 | 42,417,000 |
| | | | | | 801,601 |
| ***11,503,000*** | ***147,883,862*** | ***1,949,138*** | | ***214,336,000*** | ***197,302,601*** |
| **238,083,302** | **147,883,862** | **39,129,734** | **3,610,246** | **592,043,030** | **534,943,140** |
| 1,953,875 | 1,788,275 | | 3,070,260 | 10,542,730 | 25,159,548 |
| **240,037,177** | **149,672,137** | **39,129,734** | **6,680,506** | **602,585,760** | **560,102,688** |
| 100,166,375 | 76,951,246 | | | 244,626,525 | 253,278,538 |
| 4,178,144 | 6,941,081 | | | 37,872,929 | 25,137,510 |
| 80,478,593 | 12,552,728 | | 2,118,769 | 118,472,553 | 109,951,094 |
| | | | | | 83,462 |
| 824,723 | 46,109,435 | | | 46,934,158 | 42,339,170 |
| 80,954 | | | | 80,954 | 1,070,228 |
| | | 8,588,889 | | 8,588,889 | 8,517,540 |
| | | 27,225,559 | | 27,225,559 | 25,027,492 |
| 1,132,546 | | | | 2,189,320 | 2,783,288 |
| 267,380 | | | | 280,262 | 105,154 |
| 1,162,036 | | 1,224,993 | | 4,328,405 | 8,568,004 |
| 10,871,617 | 3,857,802 | 2,090,293 | 170,000 | 23,959,378 | 20,742,278 |
| 3,225,992 | | | | 5,376,653 | 5,292,071 |
| 517,354 | | | | 1,120,933 | 1,165,319 |
| 4,020,350 | | | 883,000 | 12,235,550 | 11,260,000 |
| 25,350,718 | | | 587,986 | 39,502,852 | 25,331,720 |
| *232,276,782* | *146,412,292* | *39,129,734* | *3,759,755* | *572,794,920* | *540,652,868* |
| 234,585 | | | | 508,267 | 463,880 |
| 614,700 | | | 109,000 | 1,705,700 | 1,601,000 |
| 976,539 | | | 29,826 | 3,401,258 | 3,291,791 |
| 1,184,000 | | | 841,700 | 9,354,860 | 7,341,700 |
| **235,286,606** | **146,412,292** | **39,129,734** | **4,740,281** | **587,765,005** | **553,351,239** |
| 442,147 | | | | 308,873 | 3,791,281Cr. |
| 2,456,759 | 3,259,845 | | 1,940,225 | 8,983,622 | 4,705,597 |
| 1,851,665 | | | | 5,528,260 | 5,837,133 |
| **240,037,177** | **149,672,137** | **39,129,734** | **6,680,506** | **602,585,760** | **560,102,688** |

# F5 EXTENSION FROM CASULA TO BEVERLY HILLS

In September 1982, the Minister for Consumer Affairs and Roads, the Hon. Paul Whelan, LL.B., M.P., announced that the F5—South Western Freeway is to be extended from the Hume Highway at Casula to King Georges Road at Beverly Hills.

A four-lane, 290 m long bridge is currently being built for the Department of Main Roads on the route of the F5—South Western Freeway at Casula. This $3 million structure will cross the Georges River, the Main Southern Railway Line and Lakewood Crescent and will be completed towards the end of 1983. The bridge will relieve congestion at the existing Liverpool Bridge on Heathcote Road and will provide an alternative to the flood-prone causeway crossing at Cambridge Avenue, Glenfield.

It was originally intended to connect the new bridge to the Hume Highway on the west and Moorebank Avenue on the east. However, it is now planned to extend the initial construction of the Freeway on the eastern side to Heathcote Road.

Work has started on the detailed design, the acquisition of properties, and the adjustment of public utilities. The first stage of construction will comprise a single carriageway providing for two lanes of traffic.

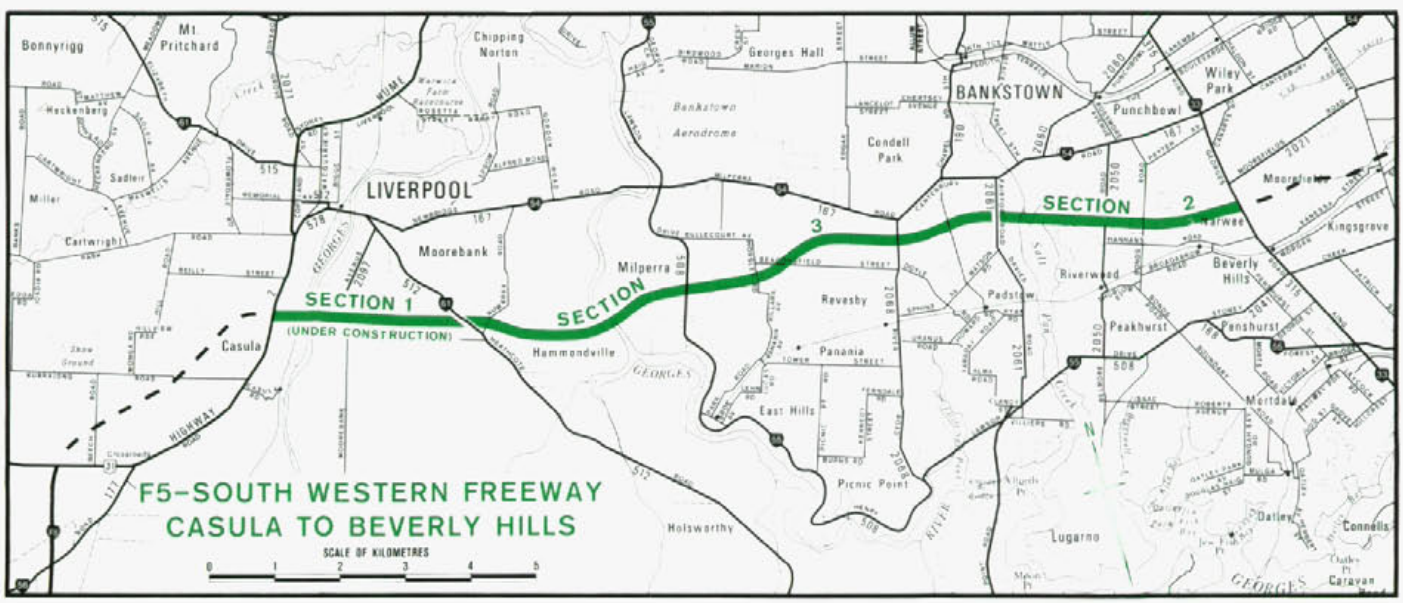
Although it is intended to complete a single carriageway of the freeway from Casula to Beverly Hills as soon as possible, it will be necessary to acquire the full reservation throughout before starting construction.

The second section to be constructed will be from Fairford Road to King Georges Road, Beverly Hills. The third section will be the middle portion from Heathcote Road to Fairford Road.

The design for the Fairford Road to King Georges Road section will take up to 18 months as there are many bridges involved in the work. Construction of the first carriageway will take a further three and a half years, making a total construction programme for this section of five years. Work is being planned to start as soon as possible in order to provide more job opportunities.

The freeway link with King Georges Road will bring many community benefits. It will reduce congestion and improve travelling conditions along the Hume Highway from Casula to Greenacre, as well as along Heathcote Road (Main Road No. 512) and along Newbridge Road—Milperra Road—Canterbury Road (Main Road No. 167).

The estimated cost of the first two sections from Casula to Heathcote Road and from Fairford Road to King Georges is $47 million. The third section from Heathcote Road To Fairford Road will cost a further $32 million. ●



# Tenders Accepted by Department of Main Roads

**The following tenders (in excess of $20,000) for road and bridge works were accepted for the three months ended 30 September 1982.**

| Road No. | Work or Service | Name of Successful Tenderer | Amount |
|---|---|---|---|
| State Highway No. 2 | Hume Highway. City of Wagga Wagga. Win, crush, load and haul natural rock to 49 km south of Gundagai and win, crush and stockpile. | Olding Excavations Pty. Ltd. | $118,800.00 |
| State Highway No. 2 | Hume Highway. Shire of Gundagai. Loading, hauling and tipping material. | Gundagai Local Tippers | $359,000.00 |
| State Highway No. 5 | Great Western Highway. City of Penrith. Part construction of two culverts near Miller Street and near Cosgrove Crescent, Kingswood. | Ripma Constructions | $33,119.00 |
| State Highway No. 9 | New England Highway. Municipality of Singleton. Erect 4000 m guardrail and 15 terminals to approaches to Bowmans Creek bridge and other sites on the highway. | S.N. Stair | $24,525.00 |
| State Highway No. 9 | New England Highway. City of Maitland. Supply and lay 1700 t of asphaltic concrete to dual carriageway from Mitchell Drive to George Street, East Maitland. | Hawkins Asphalt Ltd. | $109,327.00 |
| State Highway No. 10 | Pacific Highway. Municipality of Lake Macquarie. Supply and deliver 4000 $m^3$ of ready-mixed concrete to construction work at Cains Hill, Charlestown. | Blue Metal and Gravel (Country) Pty. Ltd. | $267,940.00 |
| State Highway No. 10 | Pacific Highway. Shire of Wyong. Supply and deliver 300 t of fly ash cement to intersection of highway and Main Road No. 509 at Doyalson. | Kooragang Cement | $24,537.00 |
| State Highway No. 10 | Pacific Highway. Municipality of Lake Macquarie. Supply and lay 1200 t of asphaltic concrete for maintenance work at Belmont. | Boral Road Services | $81,660.00 |
| State Highway No. 10 | Pacific Highway. Shire of Tweed. Manufacture and deliver pretensioned concrete girders for railway overbridge at Burringbah Station. | Humes Ltd. | $88,120.00 |
| State Highway No. 17 | Newell Highway. City of Dubbo. Widening of bridge over Mountain Creek. | G. & E.M. Tincknell | $48,819.25 |
| Main Road No. 208 | Shire of Muswellbrook. Stabilisation of rock cuttings with rock anchors and shotcrete at deviation in vicinity of Stevens Flat, 27.8 to 31.2 km west of Sandy Hollow. | Andreco Pty. Ltd. | $167,450.00 |
| Main Road No. 522 | Shellharbour Road, Kerros Road and Barrack Avenue, Barrack Heights. Installation of traffic signals. | P. W. Kirby Pty. Ltd. | $21,300.00 |
| Alpine Way | Kosciusko National Park. Winning, crushing and stockpiling of up to 5000 $m^3$ of crushed rock. | Olding Excavations Pty. Ltd. | $29,750.00 |

# Tenders Accepted by Council

**The following tenders (in excess of $20,000) for road and bridge works were accepted for the three months ended 30 September 1982.**

| Council | Road No. | Work or Service | Name of Successful Tenderer | Amount |
|---|---|---|---|---|
| Coonamble* | Main Road No. 129 and Trunk Road No. 4053 | Bitumen sealing on Main Road No. 129 between 32.6 and 34.4 km east of Coonamble and on Trunk Road No. 4053 between 3.6 and 4.5 km east of Coonabarabran Shire Council boundary. | Spraypave Pty. Ltd. | $21,866.75 |
| Deniliquin | State Highway No. 2 | Reconstruction of Ochtertyre Street between Hardinge and Crispe Streets, Deniliquin. | Emoleum (Aust.) Ltd. | $22,317.62 |
| Singleton | Main Road No. 503 | Construction of approaches to bridge over railway line at John Street, Singleton. | G. Hawkins and Sons Pty. Ltd. | $689,917.65 |
| Wagga Wagga | Trunk Road No. 78 | Asphaltic concrete sealing of sections of Baylis and Fitzmaurice Streets. | Pioneer Asphalts Pty. Ltd. | $29,786.00 |
| Wagga Wagga | Various and Trunk Road No. 78 | 1. Supply and spray bitumen on various trunk and main roads.<br>2. Supply and spray bitumen on Trunk Road No. 78 between 8.5 and 12.6 km south of Wagga. | Boral Road Services | $65,296.30 |
| Walgett | Trunk Road No. 68 | Reconstruction and bitumen surfacing 7.6 to 13.5 km west of Walgett. | Walgett Shire Council | $549,462.95 |

**This was not included in the return for the quarter ended 30 June 1982.*