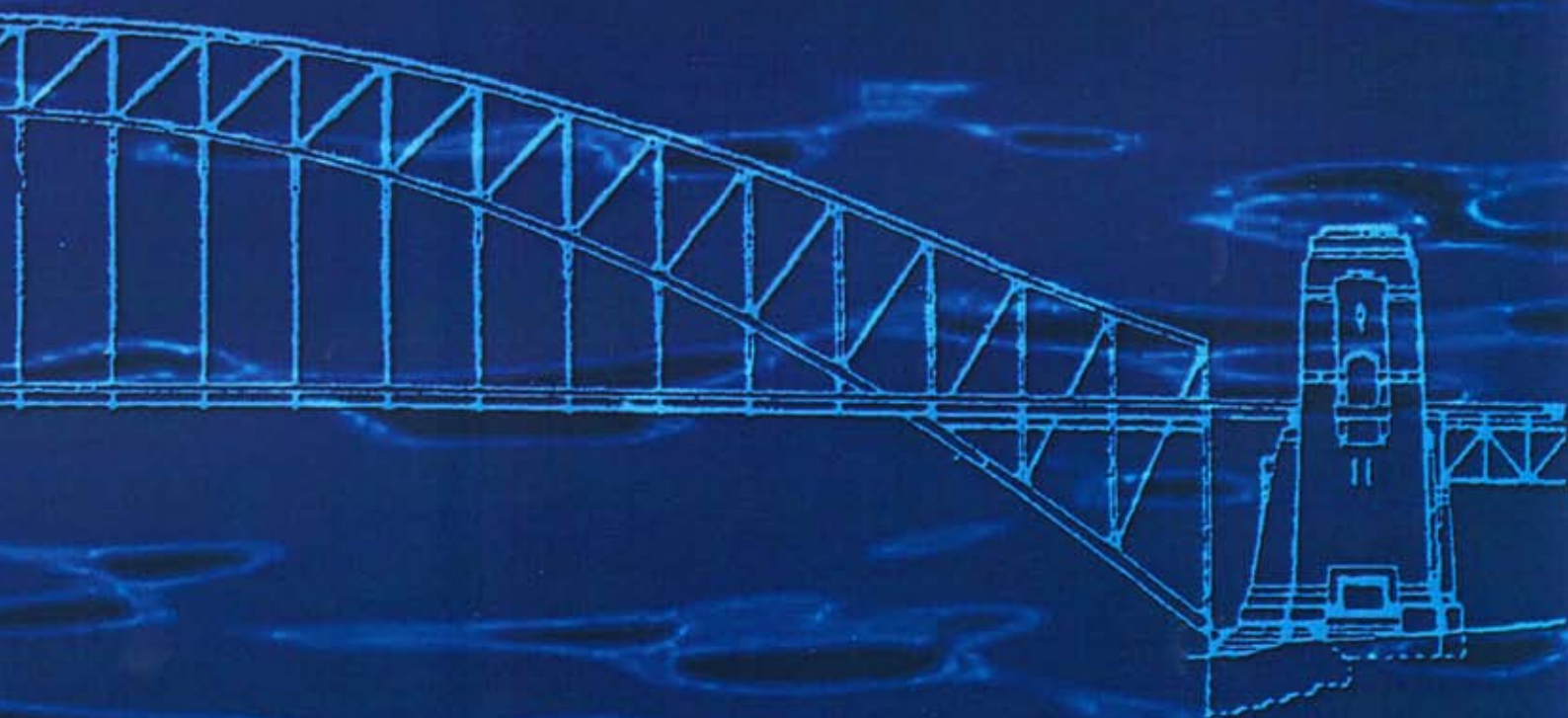


SYDNEY HARBOUR BRIDGE
WORKERS

HONOUR ROLL 1922-32



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JO HOLDER & GAVIN HARRIS



**Pylon
Lookout™**

SYDNEY HARBOUR BRIDGE

A PYLON LOOKOUT PUBLICATION

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Title Page Illustration: RGC 'Chas' Coulter, *Labore et Honore*, 1924, illustration, from glass negative in Dr Bradfield collection
State Records NSW.

FOREWORD

We are fortunate to be able to celebrate the ambition and extraordinary vision of the Bridge builders and their teams of workers: the engineers, surveyors and architects; the blacksmiths, boilermakers, carpenters and concreters; the stonemasons, riggers, crane drivers, painters and day labourers.

Their legacy is an icon like no other. The Bridge symbolises a young nation's daring and achievement. It has forged our national identity and is a focus and gathering point 'at times of national celebration'. We are indeed privileged to be able to share it with the world.

I congratulate the New South Wales Roads and Maritime Services for their commitment to the conservation of this masterpiece.

Paul Cave

Chairman & Founder, BridgeClimb



THE UNKNOWN WORKER

In *Triumph of Labour*, cartoonist Joe Jonsson, a former sailor and high rigger, acknowledges the skills of the Bridge tradesmen and workers.

Artist: Joe Jonsson (1890–1963). Source: *Labor Daily*, 19 March 1932.

INTRODUCTION

HONOUR ROLL 1922–32

We tend to take it for granted. We have lost the knowledge that it was the most distinguished engineering achievement of its age and that ‘ordinary’ men built it with intricate calibrations and hard physical labour.

No one had tried to build such a massive arch before. New York’s Hell Gate Bridge held the world record. Completed in 1916, it was 997 feet long and JJC Bradfield, our Public Works Department chief engineer, was asking tenderers to quote on a 1650 foot span. Once he had settled on an arch, he knew that this would be ‘the strongest and most rigid bridge in the world’ and he wanted a handsome structure to compliment its magnificent setting.

Driven by his ambition and vision workers toiled on and off the site. The engineers had a few early calculating machines, the carpenters supplied their own tools, the concreters fed two 1-cubic yard capacity concrete mixers, the day labourers hauled wheel barrows and drove three 5-ton motor lorries and horse drawn carts. But

*Every man gave something of himself to this Bridge of steel and fire, built with the toil,
the sweat and the guts of a thousand men.*

Nearly £9,990,070 later, Jack Lang, the State’s controversial Labor Premier, opened the Bridge and its approaches on 19 March 1932. The engineering world hailed it as an internationally significant achievement.

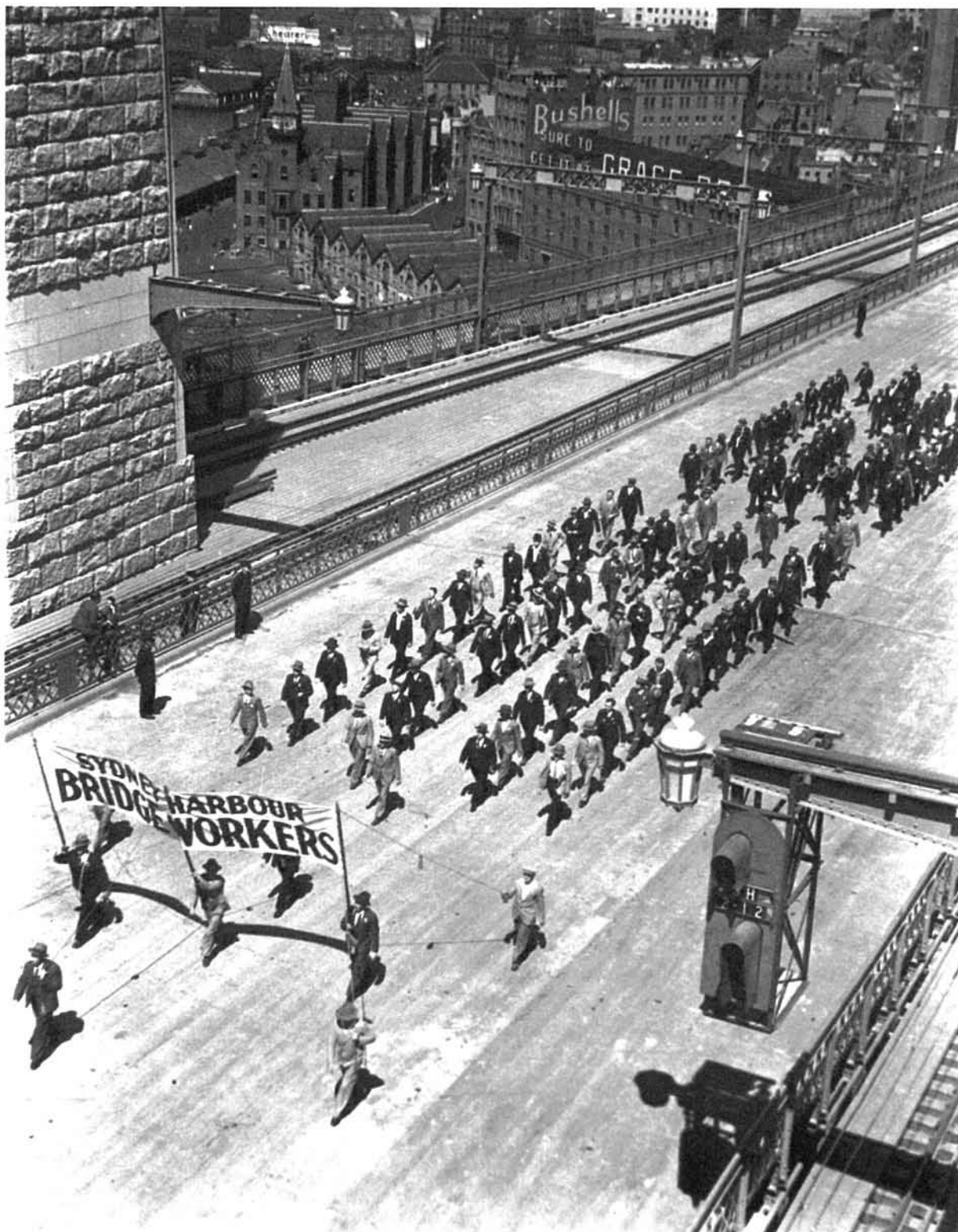
The Honour Roll, published in 2000 for the year of the Sydney Olympics, began a project to record workers’ names and their contributions. It covers the period from the Bridge Enabling Act in 1922 and the beginning of work on the northern approaches, to the opening. At first the Honour Roll covered only the Bridge and its approaches and the government’s granite quarry near Moruya. Then the tiny township of Kandos, where they built the plant to make the concrete, claimed recognition. In 2000 we identified 460 workers. Just over six and a half years later, this number has almost doubled.

About 1,500 people worked on the Bridge annually. Over the 10 years of its construction the estimated total number is 2,500–4,000. Public Works Department *Annual Reports* give the total workforce as: civil engineers 174–250; workshops at Milsons Point 83–250; painters 66–100; erection of steelwork 125–250; PWD workers on approaches 850–3000; Moruya stonemasons and blacksmiths 168–300.

The list of trades and professions is not inclusive. For example, while masons are well represented there are few carpenters and painters and the wharfies are absent. The list does not include workers from Newcastle (BHP) and Port Kembla (AIS) steelworks. The contract required them to use 50% Australian-made steel. In the end, Dorman Long imported 71% from its mill in Middlesbrough, England.) Nor does it list the specialist sub-contracted workers, for example those from Neuchatel Asphalte Co who laid coke concrete on the roadway and asphalt on the footways. It does not analyse the Bridge’s social, psychological and economic impact on our newly federated nation.

The generation that built the Bridge has almost passed away, but future generations will continue to judge them by this mighty deed.

Source: Robert Emerson Curtis, *The Bridge*, 1981.



OPENING THE BRIDGE, 19 MARCH 1932

Jock MacKay, the foreman stonemason, led 100 workers at the start of the Bridge Parade. Acknowledging their triumph in first gaining an 8-hour working day, masons head 8-Hour Day parades. One of the Sydney sites on which building workers fought against the 60-hour week, the Garrison Church in The Rocks, stands just under the Bridge's footings.

Photographer: unknown, 19 March 1932. Source: RTA 28998.

TRADES, PROFESSIONS & SKILLS REPRESENTED

PUBLIC WORKS DEPARTMENT (PWD)

The Minister for Public Works oversaw the planning and construction of most of the city's and state's landmarks and infrastructure. This department attracted the brightest and best engineering and architectural graduates. JJC Bradfield, Chief Engineer Metropolitan Railway Construction and Sydney Harbour Bridge (MRCB), was especially proud of these young graduates from Australian universities.

DORMAN LONG: THE CONTRACTORS

The Bridge contract was signed on 24 March 1924. Dorman Long & Co, steelmakers and constructors at Middlesbrough in England, won the contract using the designs of engineers GC Imbault and Ralph Freeman. Dorman Long then sub-contracted Freeman, a partner in Sir Douglas Fox and Partners, as consulting engineer and architect Thomas Tait at Sir John Burnet's London office to design the pylons and piers.

Lawrence Ennis, a director of Dorman Long, built and equipped steel workshops at Milsons Point (now the site of North Sydney Pool and Luna Park), established a village near Moruya to quarry granite and contracted Kandos Cement Company. Bradfield and Ennis worked well together. For the final test, Bradfield shunted 96 steam engines filled with ballast back and forth. Could the Bridge support 50,000 tons of steel without deflecting or deforming? Even when they crammed them onto half the span, the Bridge held true. Ennis wasn't going to wait for photos, 'get 'em off now' he yelled as Bradfield's engineers finished their measurements!

Bradfield and Ennis both paid high tribute to the workers. Bradfield said:

In tendering my thanks, I do not forget the workmen who so splendidly responded to the trust we placed in them. Throughout, they worked magnificently and built the Bridge a credit to industrial Australia.

Source: JJC Bradfield, national radio broadcast, February 1932, National Library of Australia



ADMINISTRATION

Although male administrators and clerks ran the Public Works and Dorman Long offices, some unmarried women provided administrative support as clerks, typists and personal assistants.

ARCHITECTS

Architects worked in London and in Sydney. While Thomas Tait designed the memorial pylons and piers in London, three architects at the Government Architects Branch of the PWD designed many of the Bridge's features, the north and south approaches, linked railway stations and tunnels, light fittings and the approach stairs, in striking Art Deco style.

ARTISTS & PHOTOGRAPHERS

It wasn't easy to gain access to the dangerous site. The PWD had two staff photographers, Robert Bowden and his assistant Bill Brindle and Fred Degotardi, to document works. But Bradfield knew he had to sell the Bridge's story to Sydney. He staged 'red letter days' so that press photographers could document the milestones in construction. Ennis gave strictly limited permission to Frank Cash and Henri Mallard to photograph with the new, lighter, medium-format cameras. Bradfield invited Robert Emerson Curtis to sketch illustrations. Some workers and engineers, like young Cliff Robertson, smuggled cameras onto the site. Most drew, painted and photographed the Bridge from afar.

BLACKSMITHS & TOOLSHARPS

50 blacksmiths and toolsharps prepared the tools for the Granite Town stonemasons near Moruya. Another 1 or 2 worked on the Bridge.



REUNION TIME, 1987

This gathering of Bridge workers celebrated the opening of the
Bicentennial Exhibition in the SE Pylon in December 1987.

At a party afterwards, Mary Kelman, née Gilmore from Moruya,
the oldest surviving female worker, and Peter Logue, the oldest surviving male worker, cut the cake.

Source: Main Roads, L.C.J / Journal, December 1987. Photographer: Nino Marshall.

BOILERMAKERS & THEIR SQUADS

Some boilermakers worked in the Dorman Long workshops and others worked on the main span. The boilermakers in the workshops were responsible for the fabrication of structural steelwork. They used templates to lay out the job, then platers cut the steel and drilled and placed rivets. They supervised the ironworkers who drilled the marked-off angles and assembled the parts. Working on the Bridge each boilermaker led a gang and did the riveting. His 'cooker', 'holder-up' and follow-up man supported him. Boilermakers wore hats, waistcoats and aprons and they valued practical learning, experience, precision and hard work. Only recognised tradesmen could use the tools.

Tradesmen's families indentured their sons or nephews 'to faithfully, diligently and assiduously serve' and obey Dorman Long's managers for five arduous years. In return they were taught to become skilled tradesmen by day and attended Technical College at night. Charlie Brown and Tom Ivory spent most of their apprenticeships there. Jack Rue and Ian Ferrier moved on to do some bolting-up and riveting work. They had to be spot-on. Jack remembered 'that everything had to be perfect'. These lads completed their apprenticeships in 1931, or were laid off in the last stages of the building.

CARPENTERS & THEIR SQUADS

Hundreds of carpenters built the oregon falsework and formwork that the concreters needed to make the piers, pylons and parapets. Many came from the bush and each one supplied his own tool kit. They worked in gangs of 20 and had 20 labourers supporting them.

CONCRETERS & THEIR SQUADS

Concreting was largely manual, in 1926 the PWD boasted just two 1-cubic yard capacity concrete mixers. 24 concreters worked in north and south gangs; six would concrete and six mix. Concrete compounds were tested at Sydney University's Peter Nichol Russell School of Engineering. They made their concrete from graded Moruya granite aggregate, Nepean sand and Kandos cement mixed with enough water to get the right strength. After 1931 cheaper aggregate was sourced at Bombo on the South Coast.

COSTING CLERKS

Because of the high stakes, bookkeeping and cost-keeping systems were meticulous. Bradfield certified all the expenditure and forwarded the bills to the Chief Accountant for payment.

CRANE DRIVERS

The creeper crane drivers, Jock King and Vic Wilkinson, were regarded as technical or engineering staff and earned £1,000 per year. They communicated to the 12 steel erectors by phone as they lifted the steel sections from the pontoons below. Each creeper crane had the functions of 5 smaller cranes. It could hoist, traverse, advance, reverse and derrick. Other men with operators' certificates, such as Syd Ladd, Billie Lewis, and 'Hastie', drove the electric and steam derrick cranes, two gantry cranes, steam loco cranes and the hand cranes in the workshop and on site. The dogmen were ironworkers and worked with the crane drivers to secure, load and unload.

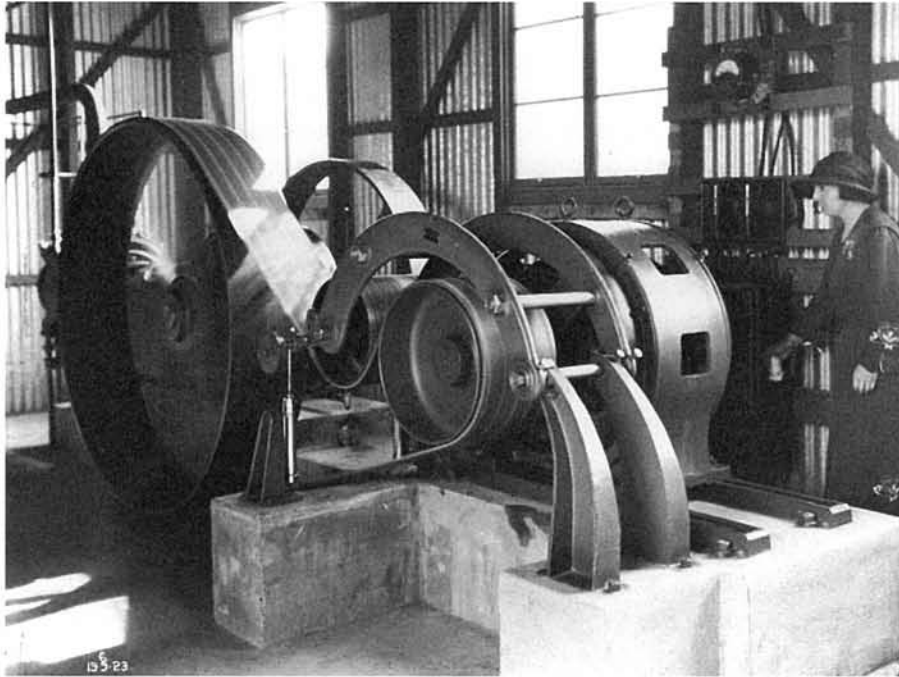
DAY LABOURERS

These were casual workers hired through the PWD Labour Bureau to demolish buildings and excavate the foreshores. This system was thought to be fair as it eliminated 'the middle man'. Once the construction began, Bradfield and Ennis used them to back up all the skilled gangs.

ENGINEERS, ENGINEERING DRAFTSMEN & DRAFTSMEN

The engineers held senior positions, engineering draftsmen had university degrees and the draftsmen had technical training. Ralph Freeman's men designed the details in London and Lawrence Ennis brought a second team to Sydney, where he hired some other professionals for his team.

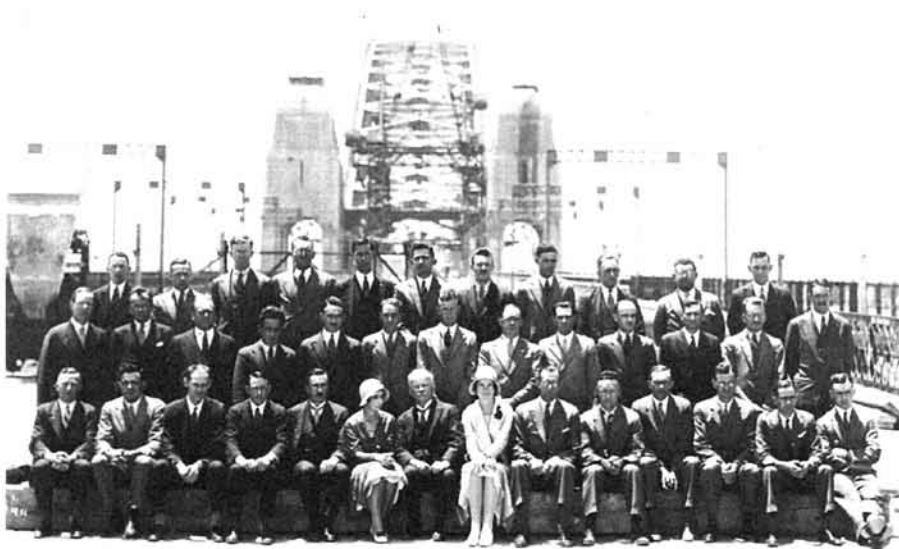
Meanwhile, JJC Bradfield had three more teams working on the underground extensions and the Bridge approaches. Gordon Stuckey headed the Bridge Contract section, Bill Lush led the Road Approaches section and Robert Boyd managed the City Railway section. In addition, Frank Litchfield headed the engineers who inspected the steelwork and Roger Butler, Bradfield's nephew, supervised the men who inspected the substructure.



**CLERKS, TYPISTS & PERSONAL ASSISTANTS:
KATHLEEN BUTLER, 1923**

The construction of the Bridge's northern approaches began in earnest when Kathleen Butler switched on the electricity on 19 September 1923. Butler began as a typist with the PWD in 1910 and, as Bradfield's assistant, helped specify the Bridge Tender document.

Source: JJC Bradfield, *Thesis*, 1924, plate 85.



**ENGINEERS & ENGINEERING DRAFTSMEN:
PUBLIC WORKS DEPARTMENT, 1931**

All the senior technical staff members were engineers or engineering draftsmen. Many, like Bradfield, Frank Litchfield, Gordon Stuckey and Bill Lush, were graduates of Sydney University.

Later other graduates such as Cliff Robertson from Adelaide University joined them. Before being appointed Chief Engineer for Metropolitan Railway Construction and Sydney Harbour Bridge in 1912, Bradfield had worked for 19 years as an engineering draftsman with the Public Works Department.

Photographer: Robert Bowden, 9 December 1931. Source: RTA 32818.

ELECTRICIANS

The Public Works Department devised a scheme to light the Bridge's road, rail and footways. Charles Coulter designed six different styles that would direct the light onto the roadways and footways without creating any glare. The PWD contracted Lawrence & Hanson Electrical Company to make them. This company subcontracted some unemployed graduate engineers to make 292 fittings and Government Railway teams installed them. The Department of Main Roads replaced them in the late 1950s. The Bridge Workshop has restored thirteen of the original fittings so they can be admired in situ.

IRONWORKERS

The boilermakers supervised the ironworkers. These larrikins valorised physical prowess, individualism, innate ability and risk-taking.

PAINTERS

Painters supplied their own tins, overalls and sandshoes. Perched on scaffolding, precarious cages and bosuns' chairs, the painters began painting the 485,000 square metres of steel in 1927 and are still painting it. Bradfield, like his contemporaries, was preoccupied with the paint's durability, rather than its toxicity. He determined that 'a paint of pure white lead and pure linseed oil' would provide the best cover and added some vegetable black to create the colour that we still call 'Bridge Grey'. The painters often felt sick. Although a Melbourne inquiry had just investigated the deleterious effects of lead-based paints, the paint makers and importers had discredited anyone who complained about his sore, stiff and swollen limbs, retching, dizziness and headaches.

RIGGERS

As soon as the crane drivers had lifted a piece of steel up to the half-arch, the riggers pulled it into position, inserted pins and bolts and strapped it into place. Then they butted the joints to each other, making sure that they hadn't left any gaps. There were 12 steel erectors.

SURVEYORS

Edward Amphlett, who had known Bradfield since their student days in the 1890s, led the team which surveyed the Bridge and the underground railway extensions.

STONEMASONS & THEIR GANGS

John Gilmore managed Dorman Long's operation at the State's Moruya granite quarries. As not enough Australian masons were available they recruited Scottish and Italian masons. The quarrymen used air-powered percussion drills to make holes in the rock, they charged them with black powder and fired them with electric detonators. After this, they drilled holes into the huge lumps, and inserted plugs and feathers. Then the spallers took over, hammering the stone until it split into same-sized pieces. They also collected and crushed the spalls (waste) to make the aggregate which the concrete workers needed for the Bridge's cement.

When the specifications called for a rusticated finish, the quarry men hauled the blocks to the masons' sheds. There the hand-cutters sized them up, marked a guideline, cut marginal drafts (on the sides that would be exposed) and cut the unfinished sides so that they would fit comfortably with their neighbours. When the specifications called for a smoothly finished block, the men lifted the block, placed it in a tram-wagon and delivered it to the surfacer yard where the dressers used pneumatic surfacing machines to dress it. It was a systematic operation, the masons cut and numbered each stone in order and laid it out on the quarry floor, to make sure that it fitted. The quarried, cut, dressed and despatched approximately 40,000 dimension stones. Two stonemasons led the teams which faced the Bridge's piers and pylons with granite.





WORKING CONDITIONS & THE UNIONS

Steel erector Harry Tomrop is fifth from the right at the back of this lunchtime meeting
of the Ironworkers Association.

Felix Faulkner, who was the second of the two riggers to die on the job, is hatless in the centre.

In summer, the steel was hot. In winter, it was cold and damp. Outside, they endured the heat, rain and wind.

They may have won their fight for height and wet money, but a lot of them went deaf in later life.

Photograph: Mrs Tomrop, courtesy of Richard Raxworthy.

WORKING CONDITIONS & THE UNIONS

Every bugger in the shop was a soldier!

Source: Dave Irvine, foreman riveter, interviewed by Richard Raxworthy, 1982

JJC Bradfield was a shrewd personnel manager and ran a harmonious workplace. He would acknowledge the men, and had gained their respect. He had also written a rise and fall of wages clause into Dorman Long's contract, which meant the Government paid for any wage increases. This foresight and steady economic growth until the crash of 1928, facilitated Dorman Long's labour relations

The government discriminated in favour of war veterans, unionists and, when the Depression was exacting its toll, family men. Most of them were Australian born or immigrants, but some English engineers; Scottish and Italian stonemasons; American, British and European riggers; Irish and English boilermakers and machinists joined them on the job. As a result the work place culture and working conditions on the Bridge had exceptional and continuing social significance.

At the time, 60 per cent of male employees were trade union members. Unions were concerned about the basic wage and the working week. The engineers provided a good example. When the Amalgamated Engineering Union gained its first award in 1921 they won reduced hours from 48 to 44 hours. In 1925 the state Labor government legislated for a 44 hour week.

The draftsmen were members of public service unions, while the university graduates identified with professional associations. Chief Engineer Bradfield, one of Sydney University's first engineering graduates, had been part of the push to establish the Institution of Engineers in 1919.

Most Bridge skilled engineering workers belonged to traditional guild unions or the newer industrial craft unions that offered training and apprenticeships. Their unions had a unique bargaining power. They had captured the new machine technologies and secured compulsory apprenticeships, ceiling numbers and margins for skill. Apprentices joined the Amalgamated Engineering Union (AEU) which looked after the fitters and turners and pattern makers in the final year of their apprenticeships. It was exciting. Charles Brown, an apprentice boilermaker in the workshop, remembered:

'Everybody that worked there was in the Boilermakers' Union mainly, because they were mainly boilermakers—and the [Federated] Iron Workers. There was no set time for meetings but, if any sort of problem arose, where there was a need to approach management to iron it out, there would be a meeting. The chairman was the blacksmith on the job. And the meetings were always well attended. Everybody took a keen interest in it.'

Source: Charles Brown in Ellyard & Raxworthy 1982

Other skilled metal workers joined the United Boilermakers Society or the Sheet Metalworkers Union. The crane drivers belonged to the Federated Firemen and Engine Drivers Association. The Federated Ironworkers (FIA) represented the less skilled metalworkers. Other Tradesmen joined the Amalgamated Carpenters and Joiners Society (which became the BWIU) while the Operative Bricklayers, Operative Painters and Operative Stonemasons rigorously oversaw their craft standards. The Builders Labourers Federation represented the unskilled workers.



PAINT & PAINTERS

‘Where nerve is needed’ was this newspaper photograph’s caption.

The work was so dangerous this photo became an advertisement for ‘nerve tonic’.

But height was not the only danger the painters faced.

The colour that we still call Bridge Grey was composed of pure white lead and linseed oil with some vegetable black. It stank and they often felt sick.

Although a Melbourne inquiry had just investigated the deleterious effects of lead-based paints, the paint makers and importers had discredited any complaints.

The painters continued to use red lead paints on the Bridge until 1989, when doctors reported that painters suffer from severe lead intoxication.

The RTA now endorses the National Code of Practice for the control of lead in the workplace.

Source: *Labor Daily*, 9 February 1932.

The Milsons Point boilermakers and their squads got good money. But they had to work for it. They didn't get any tea breaks, any sick leave and any annual leave. And they didn't get clean-up time or facilities, any retrenchment notice or any compensation pay, unless they were off for three days.

Up on the arch, the gangers had to fight for height money. They won, when Judge Swindell of the NSW Arbitration Court made the 'tin hare' decision. His Honor climbed onto the arch, took one uneasy look and said 'give 'em what they want'. But they still didn't have any safety gear. As Stan London said many years later, 'you just got on with it'. All the men wore sandshoes and overalls, which they had to replace every few months. The engineers and holder-ups worked inside the dark, airless chords. In summer, the steel was hot. In winter, it was cold and damp. Outside, their mates endured the heat, rain and wind. A lot of them went deaf in later life. Although they never won, the Bridge football and cricket teams were in with a show against champion teams from Tooths Brewery and Sargents Pies in Darlinghurst.

In 1927 Justice Beeby brought down a new engineers' award which broke away from the customary craft demarcations and authorised the introduction of piece-work, or 'payment by results'. Sydney engineers, engine drivers and boilermakers struck in August 1927 and the court gave its blessing to a compromise settlement which was considerably more favourable to the men. But these downgraded working conditions were a harbinger of the Great Depression. The Wall Street stock market crashed in October 1929. More than 20% of Australian wage-salary earners and 30% of trade unionists were out of work. On the Bridge individual working hours were reduced to take on more men, earning it the nickname 'the iron lung'.

After all the controversy, and despite the hard times, 750,000 of Sydney's nearly one million people gathered around the foreshores and listened on loud speakers to celebrate the opening. A fortunate few workers hung precariously on the top chord of the Bridge itself. The rest of town tuned to live broadcast on Radio 2KY.

Today is the day of days, when political differences are forgotten. New South Wales unites in the glorification of Our Bridge, and added attraction to Our Harbour. The building of this gigantic Bridge is just as much a national milestone as Anzac.

Source: *Labor Daily*, 19 March 1932

After the Bridge opened, the Minister for Public Works, MA Davidson, tried to retain as many of his valued employees as possible, but this proved difficult as the government changed six weeks after the opening.

The Sydney Harbour Bridge Conservation Management Plan (1998) celebrates the Bridge's unique workplace culture and the ironworkers, boilermakers, fitters, electricians, carpenters, plumbers, riggers and painters who continue to maintain the Bridge in exemplary order. Ennis said:

*The men, with the exception of one or two, have not received one penny more than they were entitled to.
Every day those men went onto the Bridge, they went the same way as a soldier goes into battle,
not knowing whether they would come down alive or not.*

Source: Ennis, Address to Joyspreaders Unlimited, 16 March 1932. MoS07.





THE HALF-ARCHES ARE JOINED: PRINCIPAL ENGINEERS, 1930

Witnessing the triumphal unfurling of the flags from the creeper cranes at 8 am, 20 August 1930, are the principal engineers: JJC Bradfield, Ralph Freeman, Lawrence Ennis and his assistant Alfred Martin.

Ennis, a Scot, declared 'we have placed the Union Jack and the Australian Ensign
at the apex of bridge building of the world.

We expect future British designers and bridge builders to keep them there.'

The previous night the men (with Clarrie Hipwell but excluding Martin) were present when the steel erectors joined the half-arches. Ennis and Hipwell claimed to be the first to cross, but some workers boasted they beat them to it, crossing via the creeper cranes.

Photographer: Robert Bowden, 20 August 1930. Souce: RTA 31692.

STEEL, GRANITE, CONCRETE

Granite is the strongest and most beautiful stone, which has withstood the ravages of time for thousands of years; concrete is man's artificial stone; and steel man's masterpiece, the strongest and most reliable material yet manufactured by him.

Source: Bradfield, lecture to Drummoyne Branch of the Amalgamated Engineering Union, Drummoyne Masonic Hall, 17 March 1927.

2,500 PEOPLE HELPED BUILD THE BRIDGE

They worked in Sydney, Moruya, Kandos.

These are some of their names.

THE BRIDGE:

Steel, man's masterpiece ...

A-B

Addison, Sydney Edward ('Nipper'), boilermaker's assistant to Stan London; born in England and married, aged 25; fell to his death from arch, 6 March 1930 (E&R p. 159; LD 10 Feb 32; RR 82 tapes 1,2,15,16,19,20; RR 89 p. 119; RR 00)

Aitkins, E, ganger (LD 22 Feb 32)

Aitkins, J, ganger (LD 22 Feb 32)

Alchin, Harold, apprentice boilermaker, Dorman Long workshop

Amphlett, Edward Albin ('Slippery'), BE(AMF), surveyor, NSW Railways: Metropolitan Railway Construction Branch; surveyor for both the Bridge and the city railway; lived North Sydney (RR 82 tape 23; RR 00; SHB&A)

Amy, Oscar, concreter (DMR 82; WRK26)

Anderson, Bill, concrete inspector under Roger Butler; PWD field staff setting out and erecting the pylons, piers and abutments, main bearings, cable anchorages, checking observations and surveys (RR 82 tape 3; RR 00; SHB&A)

Andrews, John ('Bon'), rigger (RR 82 tape 26)

Annabello, (?) J, ganger (LD 22 Feb 32)

Anning, Cliff, boilermaker; holder-up on the arch; saw Addison fall and stopped work; born in Balmain; later on the dole then worked on the trams (ABC 82; RR 82 tapes 16,17; RR 00)

Anthony, WH, weighbridge clerk, PWD field staff for fabrication and erection of steel work (SHB&A)

Armstrong, Alfred, assistant engineer, MRCB

Armstrong, RS, supervising staff, PWD (SHBDL)

Atkin, J, foreman carpenter, PWD field staff for construction of approaches, tunnels, railway stations, concrete arches, retaining walls, subways, stairways and roadways, north side (SHB&A)

Aubourg, A, employee of the Post Office (PMG's Dept) with access authorized by Bradfield "during week days up to and including the Bridge opening" to set-up a post-office for dispatch of souvenir telegrams from the centre of the SE pylon (RTA photos 36262, 36261, photo SMH, 12 March 1932)

Bachtold, H, supervising staff, PWD (SHBDL)

Ball, Richard T, (1857-1937), engineer and politician; a successful secretary for public works and minister for railways and State industrial enterprises from June 1922 until June 1925 in Sir George Fuller's coalition government. He carried legislation to construct 526 miles (846 km) of new branch railways and to build bridges, water-supply, sewerage and harbour works. In 1922, after fifty years of controversy, as a non-party measure, carried the Sydney Harbour Bridge Act authorizing work to start and opened tenders on 16 January 1924 (ADB)

Baker, Arthur, crane operator in years 1929–1932 (BC1b)

Barber, James, trade unspecified, worked on the arch (DM 16 July 1981)

Barbour, J, boilermaker (DMR 82; WRK26)

Barclay, Jim, helped build and maintain it (Pix, 21 March 1953, p. 30)

Barling, JS, supervising staff, PWD (SHBDL)

Barlow, Sydney, engineer; worked on compression, tension and bending (ABC 82)

Barr, given name unknown, foreman carpenter (RR 82 tape 26)

Barrett, AR, boilermaker

Barton, CB, supervising staff, PWD (SHBDL)

Barton, Joe, charge hand, Dorman Long light workshop (RR 82 tape 10; RR 00)

Barton, WF, supervising staff, PWD (SHBDL)

Bavin, (Sir) Thomas Rainsford (1874–1941) leader of the Opposition, who accused Premier Lang of posing as 'a strong man'; when Bavin's National and Country party coalition won office in 1927, he became premier and colonial treasurer. In the 1930 election campaign, in the face of the Depression, Bavin could only prophesy gloom and stress the need for self-sacrifice. Lang won a landslide victory. Resigned as leader in March 1932 (ADB)

Baxter, Dave, stonemason's labourer (RR 82 tape 3; RR 00; WRK26)

Baxter, Jack, stonemason (RR 82 tape 3; RR 00; WRK26)

Bayliss, W, ganger (LD 22 Feb 32)

Beesley, John, assistant chief engineer to F Osbourn in drawing office, Dorman Long; worked on design of details for erection equipment (DL 32; SHB&A)

Begg, GR, supervising staff, PWD (SHBDL)

Beggs, William ('Bill'), riveter; born in Ireland (RR 82 tapes 16,29)

Belcher, Jack, derrick crane driver, Milsons Point wharf

Bell, Sir T Hugh, a senior partner in Dorman Long and Co; visited Moruya with his daughter, Gertrude Bell, teacher and writer; told Sydney the granite Pylons would last 'till the crack of doom'

Bennett, AR, boilermaker in template loft (DMR 82; WRK26)

Benson, Jack ('Tarzan'), steel erector, Swedish (RR 82 tape 1; RR 00; WRK26)

Bentley, Norm, boilermaker's assistant, SP bookie's runner at Dorman Long workshop (E&R; RR 82 tape 5; RR 00)

Black, Samuel Sidney, rigger in years up to 1932 (BC1b)

Blake, RH, chief civil engineer, erection of substructure: excavations, pylons, piers, screwbacks and surveys, Dorman Long (DL 32; SHB&A)

Blandford, AJ, supervising staff, PWD (SHBDL)

Blatchford, Earl, painter (DMR 82; WRK26)

Blatchford, Richard, painter (DMR 82; WRK26)

Blomquist, Peter, helped build it, then maintain it (Pix, 21 March 1953 p. 30)

Bode, CW, supervising staff, PWD (SHBDL)

de Boos, Walter (known also as Walter Gosbee), Boilermaker, Australia

Boughton, Samuel, leading chainman in charge of measurements; checked expansion and contraction; claimed he was the first to cross the bridge, stood with a foot on either side of the gap (*Daily Telegraph* 25.11.1999)

Boulton, JJ, supervising staff, PWD (SHBDL)

Boulton, Ken, Dorman Long (DMR 82; WRK26)

Bowden, Robert ('Bob') (1886–unknown), photographer who documented construction (MRCB) (RR 82 tapes 10,23)

Bowker, Miss Eileen Marjorie (1907–2001), born and lived in Shanghai until age 8; graduated Metropolitan Business College 1925; clerk: shorthand-writer and typist, PWD, September 1925; by 1929 her annual salary was £143/0/0 (half a male wage). She transferred to the Bridge Branch in October 1929 as Bradfield's personal assistant (replacing Kathleen Butler) where she dealt with all accounts and typed his National Radio Broadcasts; left to work with Bradfield and Sons building the Brisbane Bridge. Returned to Sydney during the war and began a second distinguished career in telecommunications, first with AWA then Overseas Telecommunications Service. Awarded the British Empire and Queen's Silver Jubilee Medal. She left her Bridge artifacts, presented to her by Bradfield, including a leather-bound copy of his 'National Radio Broadcasts, 1931–32', to the Powerhouse Museum (PSL 29; RR 89 p. 126)

Bowles, Charles, engineering draftsman, MRCB

Boyd, Robert James, principal designing engineer, 1920–32, MRCB, PWD; responsible for the railway approaches for the City Railway; from 1934 Boyd was inspecting engineer, Dept of Railways; son of a pioneer from Ireland who attended Nowra High School then Sydney University (RR 82 tape 23; SHBDL; RR 00; MoS07)

Bradfield, Dr John Job Crew ('Jack'), the son of a Queensland bricklayer then fettler, Bradfield (1867–1943) was Sydney University's ninth engineering graduate. Appointed Chief Engineer Metropolitan Railway Construction and Sydney Harbour Bridge (MRCB) after 19 years with the Public Works Department. He wanted to electrify Sydney's railways, to build an underground railway system and a bridge across the harbour. He promoted this vision for ten years but successive parliaments would not, or could not, raise the money. Finally, Bradfield's reputation and the aura of building a monumental structure won the day. Parliament passed an Enabling Act in 1922 with the final speaker adding 'Ad gloriam Bradfieldii! Good luck to him'. When Dorman Long won the competition for tenders in 1924, Bradfield declared that this English firm would 'realise my design ... as specified'. He said: "when these great works are completed, I hope the judgement of my fellow Australians will be that they are simple, elegant and of the greatest utility". The

Bridge is a monument to Bradfield's persistence and skill. He normally wore a battered old hat. He was awarded CMG, DSc(Eng), MICE, MIE Aust. A founder of the Institution of Engineers Australia in 1919, the Institution awarded him its Peter Nichol Russell Medal in 1932, the University of Melbourne awarded the Kernot Memorial in 1933 and the Institution of Civil Engineers London awarded the Telford Gold Medal in 1934. (ADB; RR, *The Life and Works of JJC Bradfield*, 1989 is the standard reference; E&R; LD 22 Feb 32; RR 82 tapes 3,6,7,10,14,15,17,23)

Bradley, RJ (Jack), boilermaker (DMR 82; WRK26)

Brand, Charles, trade unknown (RR 82 tape 24)

Branson, Albert, stone mason (BCIb)

Breen, E, ganger (LD 22 Feb 32)

Brindle, Bill, apprentice photographer, assistant to Bob

Bowden; became an eminent newspaper photographer (RR 82 tape 10; RR 00)

Brown, AJ, drafted plans and supervised enclosure of arches to make a workshop and store (MR7.1)

Brown, William (Bill), boilermaker; born a Geordie (RR 82 tape 24; DMR 82)

Brown, Charles, apprentice boilermaker, started work in the Milsons Point Bridge Workshops February 1927, aged not quite 15; worked in the marking-out bay; like all the other apprentices was fired when he finished his time; went on the dole; later active in the union (E&R; RR 82 tapes 10, 11; RR 00)

Buchanan, RH, supervising staff, PWD (SHBDL)

Burnet(t), Sir John, ARA, FSA, consulting architect to Dorman Long on pylons and piers (E&R p. 52; SHB&A)

Burdon, Tom, from Newcastle upon Tyne who arrived in 1927 with three of his four children, invalided by a fall from the north pylon and never worked again (MoS07)

Burrow, WF, supervising engineer, MRCB

Burrows, Eric F, assistant engineer, MRCB

Burrows, George, sub-inspecting engineer, MRCB

Burston, Thomas, engineering draftsman, MRCB



ENGINEER: GORDON STUCKEY, 1930

Gordon Stuckey headed the Bridge Contract section of the PWD.

His 10 to 15 engineers worked on checking stresses, drawings, calculations and erection schemes for the main arch span, approach spans and pylons.

Stuckey also had squads of enthusiastic young engineers scrambling all over the Bridge measuring the rivet holes and joints for deformation. Their overalls and shoes were cut to ribbons within weeks.

Photographer: Robert Bowden, 18 August 1930. Source: RTA 35855.

Butler, Kathleen (1892–unknown), JJC Bradfield's niece and confidential assistant (also called Secretary to Chief Engineer) worked with the Engineers Drafting Department since 1911. Roger Butler was her brother and a cousin (Nev) also worked on the project. Bradfield had a small office staff and Butler played a key role in his success. She helped specify the tenders (1922), travelled to London to work on the tenders (1924) and wrote promotional articles for the *Sydney Mail* (1926–28) based on Bradfield's lectures. Butler was quick thinking. When Premier MF Bruxner tried to abort the construction in 1924, she cabled Bradfield to tell him that he should be somewhere else. Bradfield never received Bruxner's telegram. And by then, it was too late. Kathleen married a grazier and moved to Queensland about 1928. (Bradfield, Thesis, 1923; RR 82 tapes 17,23)

Butler, NJ ('Nev'), engineer draftsman, PWD head office staff for main arch span, approach spans and pylons (RR 89 p. 126; SHB&A; SHBDL)

Butler, Roger Joseph (1897–unknown), BE, supervising engineer first grade for masonry and substructure; in charge of PWD field staff setting out and erecting the pylons, piers, abutments, main bearings, cable anchorages and checking observations and surveys. (MRBSC; RR 82 tapes 3,23; RR 89 p. 126; SHB&A; RR 00)

C–D

Campbell, AJ, supervising staff, PWD (SHBDL)

Campbell, James Marshall, foreman rigger; the last Bridge builder to die on the job, falling from the NW Pylon when a gust of wind caught a derrick which knocked him over the side, 9 January 1932, aged 45 (E&R pp. 106, 159; LD 10 Feb 32; RR 82 tapes 3,4,5,6)

Campbell, Norman, engineering draftsman, MRCB

Carbines, R, ironworker (DMR 82; WRK26)

Carr, James, carpenter (DMR 82; WRK26)

Carroll, WR (Ray), BE, began as a draughtsman at the MRCD then SHB drawing office until late 1926; then PWD supervising engineer to the Southern Approach under William Roper; the work set out and supervised included reinforced concrete arches up to 70 feet span, retaining walls, tunnels, subways, construction of

Bradfield Highway of sheet asphalt on concrete base, Kent and York Street near Grosvenor Square, Upper Fort Street and footways (LD 22 Feb 1932; RR 82 tape 17; RR 89 p. 126; SHB&A; SHBDL; MoS07 reference from Bradfield)

Carson, Ivor, engineering draftsman, MRCB

Cash, Frank (1887–1964), when the demolitions for Dorman Long's workshops and the northern rail approach began in July 1923, Frank Cash, Rector of Christ Church at Lavender Bay and keen photographer knew lives were changing. Cash had studied metallurgy and had worked in mining for nearly ten years. He became the Bridge's most frequent visitor and the workers nicknamed him the 'Mascot Padre' Cash published his photographs in *Parables of the Sydney Harbour Bridge* (1930). This book describes the builders' techniques, but parables dominate his text.

Chatwin, W, ganger (LD 22 Feb 32)

Cheeseman, Robert, boilermaker (DMR 82; WRK26)

Cheeseman, W, supervising staff, PWD (SHBDL)

Chilvers, Cecil ('Ces'), dogman; son of Jimmy Chilvers; half-back in Bridge football team

Chilvers, James Francis ('Jimmy'), dogman; killed at Milsons Point workshops when knocked into the water by a piece of wood, 8 July 1931, aged 54 (E&R p. 159)

Christmas, Tom, ironworker (RR 82 tapes 7,14; RR 00)

Clark, PG, engineer draftsman, PWD design office staff for approaches, tunnels, railway stations, concrete arches, retaining walls, subways, stairways and roadways (RR 89 p. 126; SHB&A)

Clarke, L, ganger (LD 22 Feb 32)

Clarkson, Charles H, BE, civil engineer, erection of substructure: excavations, pylons, piers, screwbacks and surveys, Dorman Long (SHB&A)

Clayton, J, ganger (LD 22 Feb 32)

Cleary, C, foreman chainman, PWD field staff setting out and erecting the pylons, piers and abutments, main bearings, cable anchorages, checking observations and surveys (SHB&A)

Cockerill, William, engineering draftsman, MRCB

Cohen, Raymond, engineering draftsman, MRCB

- Coin**, Paddy, worked with cement mixer (RR 82 tape 3; RR 00; WRK26)
- Cole**, Thomas John James, Carpenter, 1923 - 1932, Lithgow. NSW Australia
- Coles**, H, ganger (LD 22 Feb 32)
- Colefax**, Aubrey Verner ('Bob'), clerk for Dorman Long; born in Moruya; worked at Moruya granite quarry and in the Sydney office as timekeeper (see Granite entry)
- Collins**, Ray, 'worked on the southern approaches'
- Constable**, P, supervising staff, PWD (SHBDL)
- Cook**, AJ, boilermaker, marker-off (DMR 82; WRK26)
- Cooksey**, given name unknown, delegate to Federated Ironworkers' Association (RR 82 tape 9; RR 00; WRK26)
- Copley**, AV, supervising staff, PWD (SHBDL)
- Cormack**, Alan, messenger boy; personal assistant to Lawrence Ennis (ABC 82; DMR 82; WRK26)
- Corner**, WS, supervising staff, PWD (SHBDL)
- Costello**, Edward, student engineer 1923-27; engineering draftsman, MRCB
- Costello**, Ossie, policeman turned boilermaker; assistant to Stan London after Addison was killed; was Red-Coat at the Palais Royale (RR 82 tapes 19.20; RR 00)
- Cotterill**, H, supervising staff, PWD (SHBDL)
- Coulter**, Robert Charles G ('Chas'), architect and noted architectural illustrator whose illustrations included the Royal Commission Improvement of the City of Sydney and its Suburbs Report (1908) and Canberra (for the Competition brief); signed drawings 'RCG'. Coulter began illustrating Bradfield's schemes in 1914 and eight years later, Bradfield used his them to support his parliamentary lobbying. They appeared in *Architecture* and were exhibited in important Sydney and London exhibitions. One of three designing architects comprising NSW Architects Branch who designed many of the Bridge's features. Coulter designed the entrances to the St James and the Market Street railway stations as well as aspects of the Bridge approaches, stairways and all the lighting fixtures. (RR 82 tape 23; MacKay, Thesis, UNSW)
- Courtaville**, Jack, foreman on the spans
- Courtney**, A, chainman, PWD field staff setting out and erecting the pylons, piers and abutments, main bearings, cable anchorages, checking observations and surveys (SHB&A)
- Cowling**, GA, BE, engineer draftsman, PWD head office staff for main arch span, approach spans and pylons (RR 89 p. 126; SHB&A)
- Cox**, Jack, ganger (LD 22 Feb 32)
- Cox**, Joe, ganger (LD 22 Feb 32)
- Craig**, Robert, braceman; killed at Milsons Point ballast heap on 14 September 1926, aged 63 (E&R p. 159)
- Crawley**, AJ, supervising staff, PWD (SHBDL)
- Crawley**, Pat, labourer; born 1907; worked briefly on northern pylons; worked on asphaltting in concrete arches, waterproofing the concrete; left Redfern at 3.30am to melt down the asphalt for men starting at 7.30am; scrubbed down the pylons with acid; no protective clothing provided; from Coonabarabran; on the dole until 1934 when he got work on the buses (RR 82 tapes 6,12,13; RR 00)
- Crawley**, given name unknown, trade unknown; Pat's brother
- Cribb**, PC, supervising staff, PWD (SHBDL)
- Crisp**, David, stonemason (DMR 82; WRK26)
- Croot**, Mick, electrician (DMR 82; WRK26)
- Crow**, Harry, English; met Mr and Mrs Ennis who offered him a job in the office beginning mid 1926 (ABC 82)
- Crowe**, E, commercial manager, Dorman Long administration (DL 32; RR 82 tape 11; SHB&A)
- Cruikshank**, Angus, stonemason from Aberdeen one of four masons who fixed granite on the pylons (RR 82 tape 3; RR 00; WRK26)
- Cruikshank**, James ('Jim'), stonemason at Moruya and also on the pylons; born in Scotland (see Moruya entry)
- Curtis**, Robert Emerson (1898-1996), born in Croydon, England; arrived in Australia, aged 16; left in 1922 to study at the Art Institute of San Francisco and the Art Institute of Chicago. He worked as an illustrator with planners implementing Daniel Burnham's Plan of Chicago (1909). On returning to Sydney in 1928, Bradfield commissioned him to record the Bridge's construction, published as *Building the Bridge: Fourteen Lithographs Celebrating the Construction of the Sydney Harbour Bridge* with a forward by Bradfield (1932; reprinted in 1981 as *The Bridge*, with memoirs by Curtis).

Curtis, Roy, cadet draftsman, 1930, MRCB

Daley, Sid, foreman rigger (RR 82 tapes 1,2; RR 00; WRK26)

Darcy, John P, engineering draftsman, MRCB

Darlington, Jack, inspector of paintwork, PWD field staff for fabrication and erection of steel work; maintenance work (SHB&A; Pix, 21 March 1953 p. 30)

Davidson, Frank Commonwealth, Ironworker, Born on board SS Commonwealth on route from Glasgow, Scotland to Australia.

Davidson, Mark A (1869–1949), Secretary for Public Works for 18 months until the Lang government lost office in May 1932; Miner and author; foundation member of the Australian Workers Union

Davidson, Thomas Muir, Ironworkers assistant, 27th June 1927 – 2nd February 1931, Glasgow, Scotland

Daveny, AH, supervising staff, PWD (SHBDL)

Davies, NH, engineer draftsman under Lush; PWD design office staff for approaches, tunnels, railway stations, concrete arches, retaining walls, subways, stairways and roadways; designed the tramway arch on the northern approaches (RR 82 tape 22; RR 89 p.126 SHB&A; SHBDL; RR 00)

Davies, Owen, draftsman(?); worked with SC Robertson (RR 82 tape 21)

Davis, T, ganger (LD 22 Feb 32)

Deacon, E, ganger (LD 22 Feb 32)

Degotardi, Fred, photographer on staff PWD who documented the Bridge's construction; they had a darkroom on the roof of the Public Works Building (son of PWD photographer John Jr Degotardi?) (SHBDL; WRK26)

Degotardi, John B, engineering draftsman (and photographer?), MRCB

De Groot, FE, antique dealer and member of a fascist secret army, the New Guard; outraged that an Australian Labor politician would usurp the Governor General's authority and open the Bridge, he attached himself to the Governor's guard and charged forth brandishing his sword. Policeman Bill Mackay nabbed him. De Groot was fined £9

Denny, John (Jack) Victor, Labourer, Australia

Devereaux (Devereux), Jimmy, plater; had been a footballer; lost his leg in an accident (RR 82 tape 16; RR 00)

Dickson, AJ, BE, engineer draftsman, PWD head office staff for main arch span, approach spans and

Dodd, FJ, draftsman, PWD head office staff for main arch span, approach spans and pylons (RR 89 p. 126; SHB&A)

Donovan, TH (Roy), painter (DMR 82; WRK26)

Donovan, WA, 'worked on the approaches' (DMR 82)

Douglas, R, (aka 'Wag'), masonry inspector, PWD field staff setting out and erecting the pylons, piers and abutments, main bearings, cable anchorages, checking observations and surveys (SHB&A; SHBDL)

Downes, Arthur, foreman on the second shift (RR 82 tape 6; RR 00; WRK26)

Doyle, Frank, boilermaker; union delegate and chairman of the Dawes Point mass union meetings (RR 82 tapes 1,7,14,17; RR 00; WRK26)

Drayton, Leslie, engineering draftsman, MRCB

Dryden, JE, supervising engineer; PWD field staff setting out and erecting the pylons, piers and abutments, main bearings, cable anchorages, checking observations and surveys (RR 89 p. 126; SHB&A; SHBDL)

Dunlop, Jim, stonemason (RR 82 tape 3; RR 00; WRK26)

Dunn, Cyril Emir, electrical mechanic in years 1928–1932 (BCIb)

Dunn(e), Hugh, riveter on the arch; born in Scotland; was on the dole until 1936 when he got work on Bradfield's Storey Bridge, Brisbane (RR 82 tape 2; RR 00)

E–F

East, William Rayner, joiner in years 1925–1926 (BCIb)

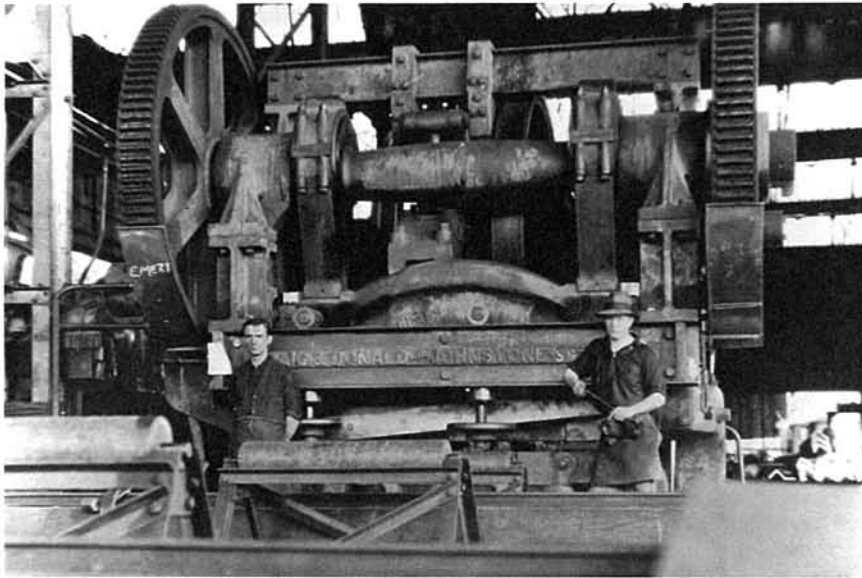
Edmonds (Edmunds), Alfred, labourer; born in Canada; died of tetanus after a crush injury at North Sydney, 24 July 1931, aged 56. (E&R pp.159, 160)

Edmonds, Jock (Jack), boilermaker, Dorman Long heavy workshop; worked afternoon shift, 4.30 to 11.30pm (E&R; RR 82)

Edwards, HB, supervising staff, PWD (SHBDL)

Edwards, Jack, boilermaker, Dorman Long workshop for ten months in 1928; started on the second shift, bolting up for the riveters; accepted a job at the Cardiff Railway Workshops (RR 82 tape 6; RR 00)

Ellis, Eenie, boilermaker (RR 82 tape 17; RR 00)



BOILERMAKERS: THE YANK, 1927

In the light workshop, the boilermakers cut and edge-planed the steel plates before using templates and drawings to mark them out for drilling. 'The Yank' operated the steel cutting mangle.

Frank Cash hoped this photo would convey his precision.

Photographer: Frank Cash. Courtesy Moore Theological College.



BOILERMAKERS: VINCENT KELLY, 1931

In 1930 Vince Kelly won 'boilermaker of the year'. But Kelly, a superb diver, is celebrated for surviving a fall from the arch on 31 January. The Secretary for Public Works, Mark Davidson, presented him with a gold medal and watch, after his recovery only 17 days later from 'falling into the harbour, a distance of 182 feet'. But some accounts say Kelly was left with a stutter.

Photographer: unknown. Courtesy Paul Cave Collection. Source: RR 82, *Australian Coin Review*, May 1982.

Ellis, Thomas William, boilermaker in years 1928–1932 (BC1b)

Ellis, Walter (Wally), holder-up on the arch; had a lucky escape when he fell but was pulled back up by his air hose (RR 82 tape 1; RR 00)

Englert, Wilton John, ironworker (BC1b)

Ennis, Lawrence, CMG, OBE, M Inst CE, Director Dorman Long and Director of Construction, Sydney Harbour Bridge. Ennis (1872–1938) orchestrated the movement of steel and stone and skilled tradesmen. He was seen as ‘a big man who did a big job’, but with humility. Scottish born and raised in USA, Ennis ran one of American Bridge Company’s (an arm of the United States Steel Corp) biggest plants until he crossed to Dorman Long in 1903 to build bridges in India. In 1924 Ennis signed the Bridge contract and built and equipped steel workshops at Milsons Point, established a village near Moruya to quarry granite and contracted Kandos Cement Company. When the half-arches met, Ennis was overcome, but finally said ‘thank God she is home’ (*Sydney Mail*, 16 March 1932; DL 32; E&R p. 49; RR 82 tapes 7,14; RR 89 p. 110; SHB&A)

Erdman, Clarence (‘Clarrie’), various including drilling in the tunnels (RR 82 tape 26)

Evans, KH, assistant engineer RFO, London (DL 32)

Evans, Tom, foreman painter; born in Dublin; went to sea at the age of 14, then worked on rigging jobs and on the Bridge as a painters’ rigger; rigged for Peter Meichen after Jim Campbell’s death; worked on Concord, Lane Cove and Iron Cove bridges; later on the dole, then worked for the gas company (RR 82 tapes 6,7; RR 89 pp. 119, 131; RR 00; WRK26)

Evernden, George, holder-up on the arch, rigger; had a lucky escape when he fell from the first deck hanger but grabbed the staging; born in Australia (RR 82 tapes 9,10; RR 89 p. 106; RR 00)

Eyre, CH, supervising staff, PWD (SHBDL)

Faber, Oscar, consultant; a London-based engineer, designed the hexagonally shaped, steel-framed concrete skewbacks (RR 00)

Fahey, JP, supervising staff, PWD (SHBDL)

Farr, Jack, crane driver (RR 82 tape 3; RR 00; WRK26)

Farrow, William, supervisor of construction, MRCB

Faulkner, John Alexander (Felix), rigger; Canadian; crushed on deck level by a steel plate, died 30 March 1931, aged 40 (E&R p. 160; RR 82 tapes 4,6,8,14; RR 89 pp. 107, 119; RR 00)

Favell, Frank, engineering draftsman, MRCB

Fennell, F, ganger (LD 22 Feb 32)

Ferguson, Charles Farrugia, rivet cooker; iron worker in the years 1926–1931 (BC1b; DMR 82; WRK26)

Ferguson, JW, chief mechanical engineer, Dorman Long (SHB&A)

Ferguson, L, ganger (LD 22 Feb 32)

Ferrier, Ian, apprentice boilermaker in the template loft; born in Australia; during the depression rode his bicycle around NSW and Queensland doing odd jobs (RR 82 tape 5; RR 00)

Fewtrell, AC, supervising staff, PWD (SHBDL)

Fitzgerald, HB, supervising engineer, with PWD field staff for construction of approaches, tunnels, railway stations, concrete arches, retaining walls, subways, stairways and roadways, north side. (SHB&A; SHBDL; RR 89 p. 126)

Flinidt, HS, supervising staff, PWD (SHBDL)

Flower, C, draftsman, PWD head office staff for main arch span, approach spans and pylons (SHB&A)

Foley, Charlie, ganger (RR 82 tapes 26, 30)

Forrest, G, drawing office staff RFO, London (DL 32)

Forster, ADJ, principal designing engineer, 1916–20, MRCB

Forsyth, JW, supervising staff, PWD (SHBDL)

Fox, Sir Douglas, consultant engineer to Dorman Long on fabrication and erection (SHB&A)

Fraser, KA, inspecting engineer, supervising staff, MRCB then PWD (SHBDL)

Freeman, Ralph, (1880–1950), consultant engineer to Dorman Long; born in London. When Cleveland Bridge Co withdrew its tender, its consulting engineers GC Imbault and Ralph Freeman approached Dorman Long with a proposal for an arch bridge. Dorman Long took up their ideas and Freeman, a partner in Sir Douglas Fox and Partners, as consulting engineer. Freeman worked well with Bradfield for several years. However, when Bradfield's article appeared in *Engineering* (April 1928) they started squabbling over their reputations. The Institute of Civil Engineers (London) tried to defuse their 'unethical' row. When Freeman arrived to see them join the arch, *The Sun* published a letter from an Institute member asserting Bradfield and his staff had designed the scheme and that Dorman Long and its consultants had calculated, detailed, fabricated and erected the Bridge under Bradfield's supervision. Neither man suffered. Freeman became Sir Ralph M Instit CE, MAM Soc CE. (E&R; SHBA)

'**Frenchy**', (aka 'Froggy'), dogman, Dorman Long workshop; 'nobody knew his name'; Maltese or from one of the French islands; 'had a mouth full of gold teeth'; 'very good at his job'; saved AR Shields from injury; Crown and Anchor organiser (E&R; RR 82 tapes 5,11; RR 00)

Fry, HR, civil engineer, assistant to RH Blake on erection of substructure: excavations, pylons, piers, screwbacks and surveys, Dorman Long (DL 32; SHB&A)

Fry, Reginald H, assistant engineer, MRCB, then supervising staff, PWD (SHBDL)

Fuller, Sir George (1861-1940), his Nationalist government passed the Sydney Harbour Bridge Act in 1922; promoted economical administration but lost at the elections of June 1925 when Jack Lang led a Labor campaign for a programme of social welfare. Succeeded by Bavin as the Nationalist leader (ADB)

Fullerton, DR, civil engineer, substructure, Dorman Long (SHBDL)

G–H

Game, Governor Sir Phillip, presided over the opening ceremony as representative of King George V. Premier Lang wanted to cut the ribbon and also invited Sir Isaac Isaacs Australia's first native-born Governor General. Lang got to cut the ribbon, but Governor Game

dismissed him six weeks later. (Bethia Foott, *Dismissal of a Premier: The Philip Game Papers*, 1968; Lang, *The Turbulent Years*, 1970)

Garden, Jock, (1882-1968), born in Glasgow, arrived in Australia in 1904 as a Baptist preacher and sailmaker; leader of the 'Trades Hall Reds' and Secretary of the Labor Council (1918-1934). Ennis would negotiate with him to avert strikes (RR 82 tape 14/2; RR 89 p. 107)

Gasper, (see J Murray)

Gatwood, T, fabrication workshop foreman, Dorman Long (SHB&A)

Gaynor, W, supervising staff, PWD (SHBDL)

Geale, Arthur Harold, boilermaker for two years (BCIb)

Geary, RC, lighting electrician with the railways; did the Bridge lighting (DMR 82; WRK26)

Gilbert, GF, BE, engineer draftsman, PWD head office staff for main arch span, approach spans and pylons (RR 89 p. 126; SHB&A; SHBDL)

Gilfillan, WGR, BCE, engineer draftsman, PWD design office staff for approaches, tunnels, railway stations, concrete arches, retaining walls, subways, stairways and roadways (RR 89 p. 126; SHB&A;)

Gillies, N, ganger (LD 22 Feb 32)

Gillon, Frederick, rigger, killed instantly in a collapse in Junction Street, North Sydney on 25 July 1930, aged c.25 (E&R p. 160)

Glennie, Arthur, foreman carpenter (RR 82 tape 2; DMR 82; WRK26)

Gooding, Ivan, engineer; born in Wales; worked at Kandos, then on the Bridge; with danger money and bonuses earned about £12 a week (the average wage was £4)

Gors, Miss N, stenographer, PWD (RR 89 p. 126)

Gosper, Murray, PWD engineer; as an engineering student paid for his studies by acting as the *Sydney Morning Herald's* university correspondent (DMR 82; WRK26)

Gracie, James R, steelworker from Glasgow who arrived in 1912; PWD erection inspector (field staff) for fabrication and erection of steel work on northern arm (SHB&A; MoS07)

Graham, GH, chief electrical engineer, Dorman Long (DL 32; SHB&A)

Graham, Robert, labourer, killed on northern approaches on 8 October 1931 aged 41 (E&R p. 160)

Graham, W, supervising staff, PWD (SHBDL)

Green, Bert, construction worker

Green, JW, supervising staff, PWD (SHBDL)

Greenep, Fred, rivet boy in Milsons Point workshops; at 14 the youngest worker on the Bridge and featured in a front page newspaper photo holding the largest and smallest rivet used in construction; father was a foreman painter and getting the job was, in those Depression days, "like winning the lottery"; when the two ends were locked "we were all given a Canberra two-shilling coin and half a day off" (DT82)

Greenlees, Robert, Boilermakers assistant, 26th January 1930 – 9th April 1931, Scotland

Grey, Alec, Dawes Point delegate to AWU (RR 82 tapes 2,3,4; RR 00; WRK26)

Grey, David, boilermaker (DMR 82; WRK26)

Griffin, TN, supervising staff, PWD (SHBDL)

Griffith, H, Dorman Long UK (DMR 82; WRK26)

Griffith, WA, Dorman Long UK (DMR 82; WRK26)

Hadley, J, ganger (LD 22 Feb 32)

Hall, EJ, supervising staff, PWD (SHBDL)

Hall, HF, supervising staff, PWD (SHBDL)

Hamilton, WE, assistant engineer, RFO London (DL 32)

Handley, WE, supervising staff, PWD (SHBDL)

Hardy, John, engineering draftsman, MRCB

Harris, J ('Taffy'), erection foreman for steelwork in workshops, approach spans and arch span, Dorman Long (SHB&A; RR 82 tape 24)

Harris, Jack (or Jock), foreman rigger or stonemason; 'a little man with a big voice'; 'liked to be known as the Human Fly' (E&R p. 52; RR 82 tapes 11,14,20)

Harris, Sam, foreman rigger (RR 82 tapes 1,16)

Harrison, W, ganger (LD 22 Feb 32)

Harrison, Walter, carpenter in the years 1929–1932 (BCIb)

Harrison, WH, supervising staff, PWD (SHBDL)

Hart, Jack Leslie, electrician; installed the blinking light 'Blinky Bill' on the top of the Bridge (BCIb)

Harvey, R, ganger (LD 22 Feb 32)

Harvey, RR, erection inspector, PWD field staff for fabrication and erection of steel work (SHB&A)

Hastie, Charley, cranedriver (RR 82 tapes 3,20; RR 00)

Hastie, Jack, crane driver (RR 82 tape 3; RR 00; WRK26)

Hawkes, Reginal William, painter (BCIb)

Hawkins, JB, engineer

Hayes, Charles ('Bullshit', 'Chicka'), boilermaker; born a Geordie; worked on southern approaches (RR 82 tapes 1,19,20; RR 00)

Hazzard, R, secretary to Lawrence Ennis, Dorman Long (SHB&A; DL 32)

Heard, R, BE, engineer draftsman, PWD head office staff for main arch span, approach spans and pylons (SHB&A)

Hedley, EB, supervising staff, PWD (SHBDL)

Henderson, Paul, cadet draftsman, 1924, MRCB

Henson, E, supervising staff, PWD (SHBDL)

Hetherington, George Branson, BE, engineering draftsman, PWD supervising engineer for field staff setting out and erecting the pylons, piers and abutments, main bearings, cable anchorages, checking observations and surveys. Commissioned a bookplate from artist Eirene Mort commemorating his role in building the bridge (RR 89 p. 126; SHB&A; bookplate Mitchell Library)

Hetherington, J(or G)B, supervising engineer, PWD (RR 89 p126; SHBDL)

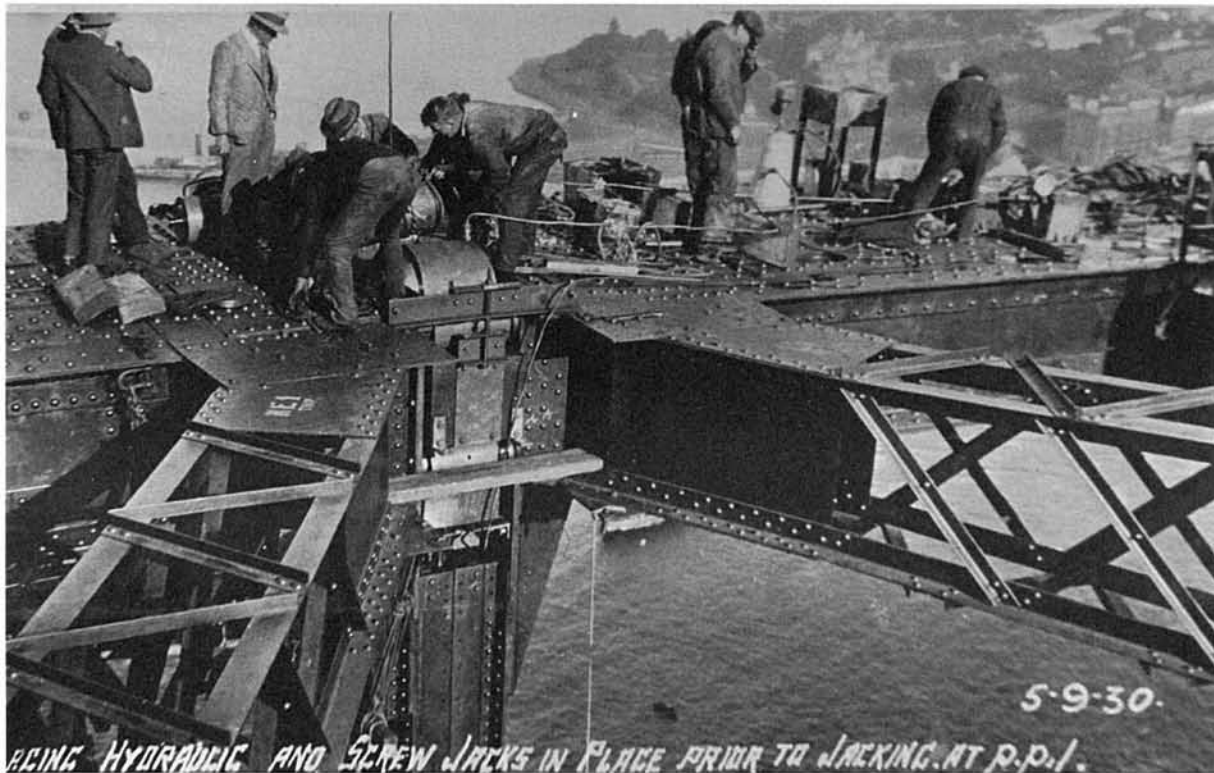
Hewett, Ed, clerk (DMR 82; WRK26)

Heydon, AR, supervising staff, PWD (SHBDL)

Hickey, John Joseph (Jack), Ironworker. Dogman

Higgins, Nick (or Mick), riveter or boilermaker (RR 82 tapes 15,16; RR 00)

Hill, RF, supervising staff, PWD (SHBDL)



BOILERMAKER'S SQUAD: CLOSING THE HALF-ARCHES

Working on the arch this boilermaker's squad places the hydraulic and screw jacks prior to jacking at 'point 1', the centre pin. When they joined the half-arches on 20 August 1930, Lawrence Ennis exclaimed 'Thank God she's home'. The morning after they, JJC Bradfield, Ralph Freeman, Ennis and Alfred Martin (workshop foreman-manager) watched the Australian and British flags unfurl.

The workers, many of them service men, sprang to attention and saluted.

Photographer: Robert Bowden. Source: RTA 31692.

Hilferty, James (Jack), Boilermaker, Glasgow, Scotland
Hipwell, Clarence, ('Clarrie') superintendent of steelwork erection in workshops, approach spans and arch span, Dorman Long; with Lawrence Ennis the first to walk across the arch in each direction; one of the men 'up there in the darkness' at the actual closure of the arch; measured the closing of the upper chords (DL 32; E&R; FC 62 p. 20–21; RR 82 tapes 2,7,14,19; RR 89 p. 110, 115; SHB&A)

Hobson, I, ganger (LD 22 Feb 32)

Hockey, GM, boilermaker

Holdaway, C, supervising staff, PWD (SHBDL)

Holgate, P, drawing office staff RF0 London (DL 32)

Holliday, Vera, see Lawson

Hollings, Frank, engineering draftsman, MRCB

Holmes, R, inspector of fabrication, PWD field staff for fabrication and erection of steel work (SHB&A)

Holt, JA ('Jim'), later Sir James, BE, supervising engineer, PWD field staff for fabrication and erection of steel work; went to London under Stuckey to check Freeman's office's calculations; assistant to Frank Litchfield checking the Bridge steel contract; the first man to walk across the Bridge 'shore to shore'; became Sir James (E&R; RR 82 tapes 21,22; RR 89 pp. 115, 126; SHB&A; SHBDL; RR 00)

Hones (Honey), Frank, engineering draftsman, MRCB

Honnor, HA, supervising staff, PWD (SHBDL)

Hood, R, foreman carpenter, PWD field staff for construction of approaches, tunnels, railway stations, concrete arches, retaining walls, subways, stairways and roadways, south side (LD 22 Feb 32; SHB&A)

Hood, R, ganger (LD 22 Feb 32)

Hudson, WB, supervising staff, PWD (SHBDL)

Hurren, William Benjamin, carpenter in the years 1927–1932 (BCIb)

Humphries, AHD, inspecting engineer, MRCB (SHBDL)

Hyde, C, ganger (LD 22 Feb 32)

I–J–K–L

Imeson, Cecil Charles, worked in Dorman Long's administration from 1925 to 1932 (BCIb)

Iredale, PW, supervising staff, PWD (SHBDL)

Irvine, David (Dave), foreman ironworker (riveter); born in Belfast; came to Australia in 1923 hoping to work on the Bridge; went on to the Bulolo Gold Dredges (RR 82 tapes 1,7,13,14; RR 89 p. 105; RR 00)

Irvine, Len (Lynn), worked on the southern approaches under an asphaltting sub-contract from the PWD; a 'Dreadnought' boy immigrant from England; ran away from the government's experimental farm at Glen Innes; walked for one hour from Redfern to Bridge job; returned to England (RR 82 tape 13; RR 00)

Isaacs, Sir Isaac, as Australia's first native-born Governor General invited by Premier Lang to preside at the opening alongside King George V's representative Governor Sir Phillip Game

Ivory, Tom, apprentice boilermaker for Dorman Long; worked under Bert Payne in the marking-out bay at the light workshops; later worked in the family farrier business in Alexandria (RR 82 tape 16; RR 00)

Jenkins, given name unknown, labourer; given a job because his house was resumed (SLOHMP)

Johnson, CA, chief mechanical engineer, Dorman Long (DL 32)

Johnson, CH, MEC, fabrication, Dorman Long (SHB&A)

Johnson, Sam, steel erector; born in England (RR 82 tape 14; RR 00; WRK26)

Jones, I, ganger (LD 22 Feb 32)

Jones, W, ganger (LD 22 Feb 32)

Kearney, Tom, trade unknown (DMR 82; WRK26)

Keating, HJ, cost accountant, Dorman Long administration (SHB&A)

Keele, CW, supervising staff, PWD (SHBDL)

Kelly, Cyril, assistant chief industrial officer, Dorman Long office; died in 1979 in his eighties (RR 82 tape 11; RR 00)

Kelly, Vincent, boilermaker; of Salisbury Road, Willoughby; died an octogenarian in 1979; very good swimmer and diver; survived a feet-first fall of 46 metres from decking into the water, breaking two ribs, in January 31; presented with a gold watch 'to mark his lucky escape' (E&R p. 56; LD 10 Feb 32; RR 82 tapes 1,2,5,6,14,19,20; PCC; *Australian Coin Review*, May 1982)

Kelman, Fred, foreman painter (RR 82 tape 26)

Kemp, AH ('Bill'), BCE, engineer draftsman, PWD head office staff for main arch span, approach spans and pylons (DT82; RR 89 p.126; SHB&A; SHBDL)

Kendell, Bradley, rigger, George Evenden's boss (RR 82 tape 30)

Kenning, C, ganger (LD 22 Feb 32)

Kerenski, O, later Sir Oleg Kerenski; Russian-born; assistant engineer RFO London (ABC 82; DL 32; RR 00)

Kerr, Alfred, driller (DMR 82; WRK26)

Killen, George, steel erector; Australian (RR 82 tape 14; RR 00; WRK26)

Kindler, JE, ME, engineer draftsman, PWD head office staff for main arch span, approach spans and pylons (RR 89 p. 126; SHB&A; SHBDL;)

King, Jock, creeper crane driver (RR 82 tape 1; RR 00; WRK26)

Kinsmill, HL, supervising staff, PWD (SHBDL)

Kitson, The Hon. RD, DSO MC, vice chairman of Dorman Long; attended the opening ceremony

Klein, Bob, crane driver (RR 82 tape 3; RR 00; WRK26)

Ladd, Syd, gantry crane driver, Milson Point wharf

Laidlaw, Reg, riveter (RR 82 tape 16; RR 00; WRK26)

Laidlaw, Stanley, riveter (RR 82 tape 16; RR 00; WRK26)

Laing, Walter, engineering draftsman, MRCB

Lakeman, FCS, BE, engineer draftsman, PWD design office staff for approaches, tunnels, railway stations, concrete arches, retaining walls, subways, stairways and roadways (RR 89 p. 126; SHB&A; SHBDL)

Lamont, Dan, riveter (RR 82 tape 14; RR 00)

Lamport, Norman Keith, boilermaker, riveter from 1925 to about 1927 (BCIb)

Lancaster, Edgar, engineering draftsman, MRCB

Lang, John Thomas (Jack) (1876–1975), as Premier of New South Wales (1925–1927 and 1930–1932) helped realise the Bridge, the underground and the electrification of the suburban rail network. Lang said: *It was the Government's job to find the money. When we took office in 1925 Bradfield got his big chance ... I realised that he was a dreamer. But behind it all was his conviction that he was planning the greatest city in the Southern Hemisphere ... behind all his dreams there was sound common sense.* During his first term, his Labor Government introduced a 44-hour week, workers' compensation, a widow's pension and child endowment. After losing the 1927 election he was re-elected when he opposed the Bank of England's insistence that the States reduce expenditure to pay the interest on government loans to alleviate the Depression. Lang's 'State rightism' and populism produced no viable alternative. His opening of the Sydney Harbour Bridge on 19 March 1932 was an exciting solace. Six weeks after the Bridge's opening, Governor Sir Philip Game dismissed Lang's government. Lang lost the subsequent election. Lang's striking appearance and black moustache, made him a formidable orator and a gift to cartoonists. (ADB; JT Lang, *I Remember*, 1956, pp. 265–266.)

Langdale, Bob, ironworker (DMR 82; WRK26)

Larkins, J, ganger (LD 22 Feb 32)

Lawrance, DS, civil engineer, assistant to RH Blake in surveys and field measurements, Dorman Long; at the closing of the upper chords (DL 32; FC 62 p. 20–21; SHB&A;)

Lawson, Vera (later Holliday), comptometer operator, clerk, typist at Dorman Long Dawes Point office; responsible for all classes of calculations including quantity calculations for the engineers; worked under Mr Vincent; used to help the pay staff (E&R; RR 82 tape 11; RR 00)

Learmouth, Dan, trade unknown, (RR 82 tape 14)

Ledberry (Ledbury), E ('Ted'), overall foreman; 'a fat old fellow and very cranky'; charge hand on the northern approaches (LD 22 Feb 32; RR 82 tape 15; RR 00)

Ledger, William, designing engineer, MRCB, then engineer draftsman, PWD produced the first (superceded) set of plans for the railway approach (RR 82 tape 23; RR 00)

Lee, FR, engineer clerk, PWD field staff for fabrication and erection of steel work (SHB&A; SHBDL)

Lees, CJ, supervising staff, PWD (SHBDL)

Leech, T, BSc, BE, engineer draftsman, PWD head office staff for main arch span, approach spans and pylons (SHB&A)

Leitch, Frank Ross, (1901–1950), boilermaker; born in Scotland (BCIb)

Leith, Jimmy, stonemason's dogman (RR 82 tape 3; RR 00)

Letson, Charlie, ganger at North Sydney (RR 82 tape 21; RR 00)

Lewis, Billie, crane driver (RR 82 tape 20)

Linder, Max ('Moses'), steel erector, born in England (RR 82 tape 14; RR 00)

Lindley, Clarrie, south pylon foreman (RR 82 tape 3; RR 00)

Litchfield, Francis Raymond, ('Frank'), BE, transferred from NSW Government Railways to SHB branch, Milsons Point; maintenance engineer; supervising engineer in charge of fabrication and erection of steel work for the main arch span, approach spans and pylons, PWD; headed the team of inspectors checking Dorman Long's workmanship (E&R; MRBSC; RR 82 tape 23; RR 89 p. 126; RR 00; SHB&A; SHBDL)

Littlejohn, M, chainman, PWD field staff setting out and erecting the pylons, piers and abutments, main bearings, cable anchorages, checking observations and surveys (SHB&A) 124)

Lloyd, JA, trade unknown (RR 82 tape 24)

Lloyd, JR, driller; had worked at Dorman Long's Middlesbrough workshop; was on the dole until 1936 (RR 82 tape 1; RR 00)

Logue, Peter, timberworker (RTA Photo 35568, 'oldest surviving worker in 1987'; DMR 82)

London, Stan, apprentice boilermaker Dorman Long workshop; worked as boilermaker on the arch, a plater

bolting up for the riveters; grabbed Nipper Addison by the sandshoe as Addison fell to his death; later had his own engineering business (RR 82 tapes 19,20; RR 00)

Lowe, Sidney, tally clerk; a good athlete (RR 82 tape 24)

Lucy, EE, supervising staff, PWD (SHBDL)

Lush, William H, BE, principal design engineer for the approaches; head of PWD design office staff for approaches, tunnels, railway stations, concrete arches, retaining walls, subways, stairways and roadways; together with HA Peach, a sometime speech writer for Bradfield; together with Peach, put out the opening ribbons; after worked with Dept of Road Transport and Tramways (RR 82 tapes 22,23; RR 89 p. 126; SHB&A; SHBDL; RR 00)

M–N

MacDonald, Bob, riveter (RR 82 tape 14)

Macfarlane, JJ, supervising staff, PWD (SHBDL)

M(a)cKay, Tom (Jock), foreman stonemason; born in Aberdeen; pipe major; could play jazz on the bagpipes; led procession across Bridge on day of James Campbell's funeral and at Bridge opening; laid the last block of granite in the presence of Bradfield, Ennis, Roger Butler and James Muir, January 1932 (E&R p. 52; RR 82 tape 15; RR 89 p. 123; RR 00)

MacKay, given name unknown; Jock's brother (RR 82)

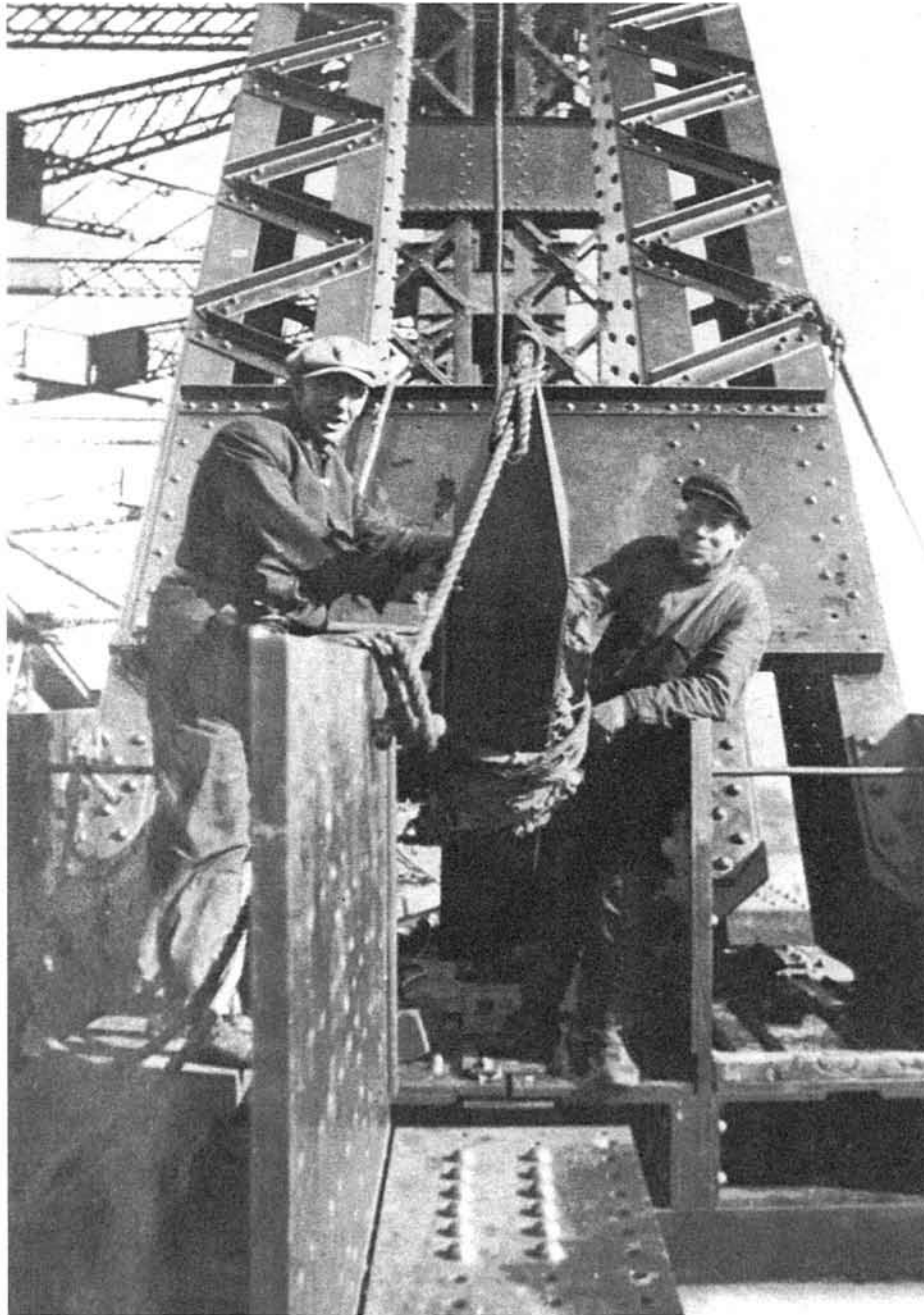
MacKay, given name unknown; Jock's second brother (RR 82)

MacLeod, John, Rigger/painter, 1927 - 32, Scotland

MacPherson, SG, supervising staff, PWD (SHBDL)

Mackay, Bill, policeman who nabbed secret army member FE De Groot after he attached himself to the Governor Game's guard and charged forth brandishing his sword during the opening ceremony.

Madsen, Aage Delusmann, worked on the north side; sustained serious ankle injury when constructing wood formwork for concrete paving; his mate suffered a fractured skull and died later. "There was no compensation and no thanks" (MoS07)



STEEL ERECTORS AND RIGGERS: HARRY TOMROP

Harry Tomrop (left) was one of 12 steel erectors. He had flown aeroplanes in the war and worked on New York skyscrapers. A strong union man, Tomrop was a key witness in the riggers' fight for height money. He had vivid memories of his job:

*As a rigger, you're here and there. You've got to do almost everything.
They used to cart the sections out on big punts in the harbour and then we'd pick them up
... On a calm day we used to ride up. Our boys up top used to take them off
... One gang tightened the job up. It had to be thoroughly tight before you riveted it
... The noise was terrible at times. [Building] the creeper crane was one of the trickiest jobs in my life.
You had to hang on by your eyelashes. You couldn't stand. You had to hang on.*

Source: RR 1982 tapes 14/2, 15/1. Photograph: Mrs Tomrop courtesy of Richard Raxworthy.

Mallard Henri (1884–1967) ran Harrington's Photographic Store and was a member of the elite Sydney Camera Circle. Ennis gave him access to the arches. His photos and film of workers handling steel, cables and cranes, were dramatically modern and informative. His film footage is used in most Bridge documentaries. His photographs were finally published as *Building the Sydney Harbour Bridge: The Photography of Henri Mallard* in 1976.

Maloney, VG, see Moloney, VG

Marstaeller, T, ganger (LD 22 Feb 32)

Martin, Alfred, overall foreman-manager workshop, assistant to Lawrence Ennis, Dorman Long administration; one of five (?) men 'up there in the darkness' at the actual closure of the arch; couldn't get work after the Depression and killed himself; his daughter, Mrs Freeda Horne, lives in Middlesbrough (DL 32; E&R p. 49; RR 82 tapes 1,9; SHB&A)

Martin, Henry, superintendent, fabrication of structural steelwork, Dorman Long workshop; template maker (DL 32; E&R; RR 82 tapes 1,5,10,11; SHB&A; RR 00)

Mastello, Frank, concreter, listed in the ganger's book for several years (BCIb)

Mastello, Vincent, concreter, listed in the ganger's book for several years (BCIb)

Matthews, P, supervising staff, PWD (SHBDL)

May, Bill, clerk of works under Jim Muir, Doug's father (RR 82 tapes 11, 4)

May, Douglas, office boy, plumber's apprentice and day labourer; Bill's son (RR 82 tape 11)

McAlpine, Norman, 'Dogman 1928-1931, born in Sydney (RR 82 tape 24)

McArthur, Charles, Dawes Point delegate to the AWU (RR 82 tape 4; RR 00; WRK26)

McCann, J, ganger (LD 22 Feb 32)

McCann, Samuel, boilermaker, riveter in the years 1925–1932 (BCIb)

McCrae, Jack, concreter (mixer); one of only 4 in the 2 concrete mixing gangs for the foundations, piers and pylons; born in Geelong, schooled in New Zealand; an AWU delegate for Dawes Point; later was on the dole (RR 82 tapes 2,3,4; RR 89 pp. 105, 119; RR 00)

McDonald, A, inspector of fabrication, PWD field staff for fabrication and erection of steel work (SHB&A)

McCrae, John Vere, boilermaker (BCIb)

McDonald, A, inspector of fabrication, PWD field staff for fabrication and erection of steel work (SHB&A)

McDonald, Ivan, PWD approach plasterer (DMR 82; WRK26)

McFarlane, A, ganger (LD 22 Feb 32)

McGee, A, ganger (LD 22 Feb 32)

McGlashen, A, ganger (LD 22 Feb 32)

McIntyre, Bruce M, assistant engineer, MRCB

McKay, John, boilermaker (DT82)

McKenzie, AS, supervising staff, PWD (SHBDL)

McKenzie, given name unknown, stonemason(?); born in Scotland (RR 82 tape 20)

McKeown, Thomas, rigger; born in Ireland; killed by a fall from a painting gantry under the Bridge decking on 27 March 1929, aged 48 (E&R p. 160; RR 82 tapes 1,2)

McKerrall, J, ganger (LD 22 Feb 32)

McLean, AE, assistant to F Osbourn, superintendent of drawing office, Dorman Long (DL 32)

McLean, Ken, boilermaker (BCIb)

McMillan, Jock, stonemason's dogman; AWU delegate for Dawes Point (RR 82 tapes 3,4; RR 00; WRK26)

McNeil, Edward, alias Nathaniel Swandells (Swondells), boilermaker's labourer; holder-up; born in Scotland; killed by a fall while riveting on approach pier, 6 December 1927, aged 22 (E&R p. 160; RR 82 tape 1; RR 00; WRK26)

McPhee, Alan, delegate to Federated Ironworkers' Association (RR 82 tape 3; RR 00; WRK26)

McPherson, Allan (Jock), Painter, Glasgow, Scotland

McSweeney, A, engineer draftsman, PWD design office staff for approaches, tunnels, railway stations, concrete arches, retaining walls, subways, stairways and roadways (RR 89 p. 126; SHB&A)

McWhirter, given name unknown, boilermaker; religiously inclined (RR 82)

Medland, Frank, construction foreman (DT82)

Meek, Archie, riveter; born in Balmain; went on to New Guinea and the Bulolol Gold Dredges; later on the dole (RR 82 tape 7; RR 00)

Meichen, given name unknown; Peter Meichen's first brother (RR 82 tape 15)

Meichen, Peter, rigger; born in Glasgow 1901; began as a sleeper cutter and after an argument with the foreman was transferred to a rigging job under Jim Campbell; cleaned his blood off the pylon when Campbell was killed; worked on pylons; put up scaffolding for masons (RR 82 tape 15; RR 00)

Metcalfe, Hall, engineering draftsman, MRCB

Milford, John D, ganger on PWD approaches (LD 22 Feb 32; DMR 82)

Miller, James, engineering draftsman, MRCB

Miller, James, boilermaker, marker-off for four years (BC1b)

Mills, EB, BE, engineer draftsman, PWD head office staff for main arch span, approach spans and pylons (RR 89 p. 126; SHB&A; SHBDL)

Milne, EO, supervising staff, PWD (SHBDL)

Minnitt, Jack, machinist (DMR 82; WRK26)

Moffat, J, supervising staff, PWD, (SHBDL)

Moffitt, A, assistant supervisor of fabrication (MoS07, photo)

Mol, John De, engineering draftsman, MRCB

Moloney, Vincent G ('Vin'), (-1987), engineer draftsman, PWD design office staff for approaches, tunnels, railway stations, concrete arches, retaining walls, subways, stairways and roadways; born in Australia, died Young NSW; donated an autographed photograph of engineers and construction staff Lambing Flat Museum, Young (RR 82 tape 1; RR 89 p. 126; SHB&A; SHBDL; RR 00)

Monks, Trevor, ironworkers' assistant (DMR 82)

Moore, Mo (or Lou), boilermaker riveter; union delegate; Vince Kelly's mate; had to be restrained from diving in to rescue Kelly; once dived from the top of the jib of the floating crane (RR 82 tapes 14,19,20; RR 00)

Moran, J, ganger (LD 22 Feb 32)

Morris, Maxwell James, clerk (DMR 82; WRK26)

Morris, R, ganger (LD 22 Feb 32)

Moses, Joe, worked with cement mixer; Syrian (RR 82 tapes 2,4; RR 00; WRK26)

Moshua, Jim, seaman; dogman, ironworker, Milsons Point wharf

Muir, James, engineer Dorman Long, superintendent of construction for substructure involving excavations, pylons, piers, screwbacks and surveys, concrete and masonry; supervised southern steel work before bridge was joined (DL 32; RR 82 tapes 1,2,4,7,11,12,15; SHB&A; RR 00)

Muir, Jimmy, rigger (RR 82 tape 15)

Munro, Jack, rigger (RR 82 tapes 29, 30)

Murphy, C, chainman, PWD field staff setting out and erecting the pylons, piers and abutments, main bearings, cable anchorages, checking observations and surveys (SHB&A)

Murphy, F, chainman, PWD field staff setting out and erecting the pylons, piers and abutments, main bearings, cable anchorages, checking observations and surveys (SHB&A)

Murray, J (Gasper), worked on the southern approaches in 1930 as engineering student; paid for his studies by acting as the *Sydney Morning Herald's* university correspondent

Muttit, Alfred, assistant superintendent to Henry Martin foreman boilermaker, fabrication of structural steelwork, Dorman Long; born a Geordie (DL 32; E&R p. 52; RR 82 tapes 10,17; SHB&A)

Mutton, F, supervising staff, PWD (SHBDL)

Myers, WH, supervising staff, PWD (SHBDL)

Nash, Ernie, stonemason's labourer (RR 82 tape 3; RR 00; WRK26)

Neale, GE, supervising staff, PWD (SHBDL)

Newall, Stewart Law, apprentice, machine assistant in years 1927-1931 (BC1b)

Nicholl (Nicoll), William, engineering draftsman, MRCB

Noonan, J, ganger (LD 22 Feb 32)

Nunn, Charlie, apprentice boilermaker (RR 82 tapes 5,10)

O-P-Q

O'Brien, Bill, carpenter on the staging on the arch and the concrete formwork of the pylons; born in Australia; later on the dole (RR 82 tape 12; RR 00)

O'Connell, CS, assistant engineer RFO London (DL 32)

Oldroyd, CWM, supervising staff, PWD (SHBDL)

Osborne, Harry, engineering draftsman, MRCB

Osbourn, F, chief engineer in drawing office, Dorman Long; worked on design of details for erection equipment (DL 32; SHB&A)

Owen, HS, draftsman, PWD design office staff for approaches, tunnels, railway stations, concrete arches, retaining walls, subways, stairways and roadways ('ganger' in LD 22 Feb 32; RR 98 p. 126; SHB&A; SHBDL)

Pain, John Freeman, MC, BSc(Eng), consultant to Dorman Long on details of the design (RR 89 p. 132; SHB&A)

Palmer, G, inspector of paintwork, PWD field staff for fabrication and erection of steel work (SHB&A)

Parr, A, ganger (LD 22 Feb 32)

Patterson, JL, assistant superintendent to Clarence Hipwell for steelwork erection in workshops, approach spans and arch span, Dorman Long (DL 32; RR 82 tape 19; SHB&A)

Payne, Bert, charge hand, marker-off for all the arch steelwork at the Milsons Point workshop; born on the Isle of Wight; on day before the arch was closed, stood with one foot on each half-arch with one and a half inch gap between; played in the Salvation Army band; became a commercial artist; (RR 82 tapes 16,17; RR 00)

Peach, Charles, foreman concreter; the 'boss' so 'didn't shovel'; materials ganger for North Sydney station (RR 82 tape 21; RR 00)

Peach, HA, engineering draftsman under Lush and Robert J Boyd; design office, PWD; worked on road and railway approaches and designing the tunnels and track work; knew the Sydney railway system; together with William Lush, a sometime speech writer for Bradfield; together with Lush put out the opening ceremony ribbons; born in England (RR 82 tapes 17,23; RR 89 p. 119, 126; RR 00; SHB&A; SHBDL)

Pearce, L, ganger (LD 22 Feb 32)

Pearce, Vincent, PWD approaches (DMR 82; WRK26)

Pearson, EW, erection inspector, PWD field staff for fabrication and erection of steel work (SHB&A)

Pearson, Jack, rigger; born Smethwick, near Birmingham; trained in Nechells Power Station, Birmingham; arrived Sydney 1922; began on Bridge 1928; attended the opening (*Winchester Evening News*, 12 May 1982 p. 4)

Pedley, J, ganger (LD 22 Feb 32)

Petersen, GE, supervising staff, PWD (SHBDL)

Peterson, Angel August, slinger; born in Sweden; sustained a fractured spine while stacking stringers at Milsons Point workshop and died six months later on 23 July 1927, aged 23 (E&R p. 160)

Phelps, Cyril Joseph ('Joe'), engineer; senior inspector of fabrication, PWD field staff for fabrication and erection of steel work; maintenance superintendent of 100 workers (SHB&A; People, 31 January 1951 pp. 50-1)

Phelps, Joe, possibly a riveter (RR 82 tape 14)

Phillips, Richard, draftsman (BC1b)

Phipps, Rose M, artist who designed the Bridge Opening Medal, 1932. Fame holds a laurel wreath above the Bridge. Her right hand rests on the shoulder of a boilermaker and an engineer holds the Bridge plans. On the reverse is the Bridge motto *Labore et Honore*

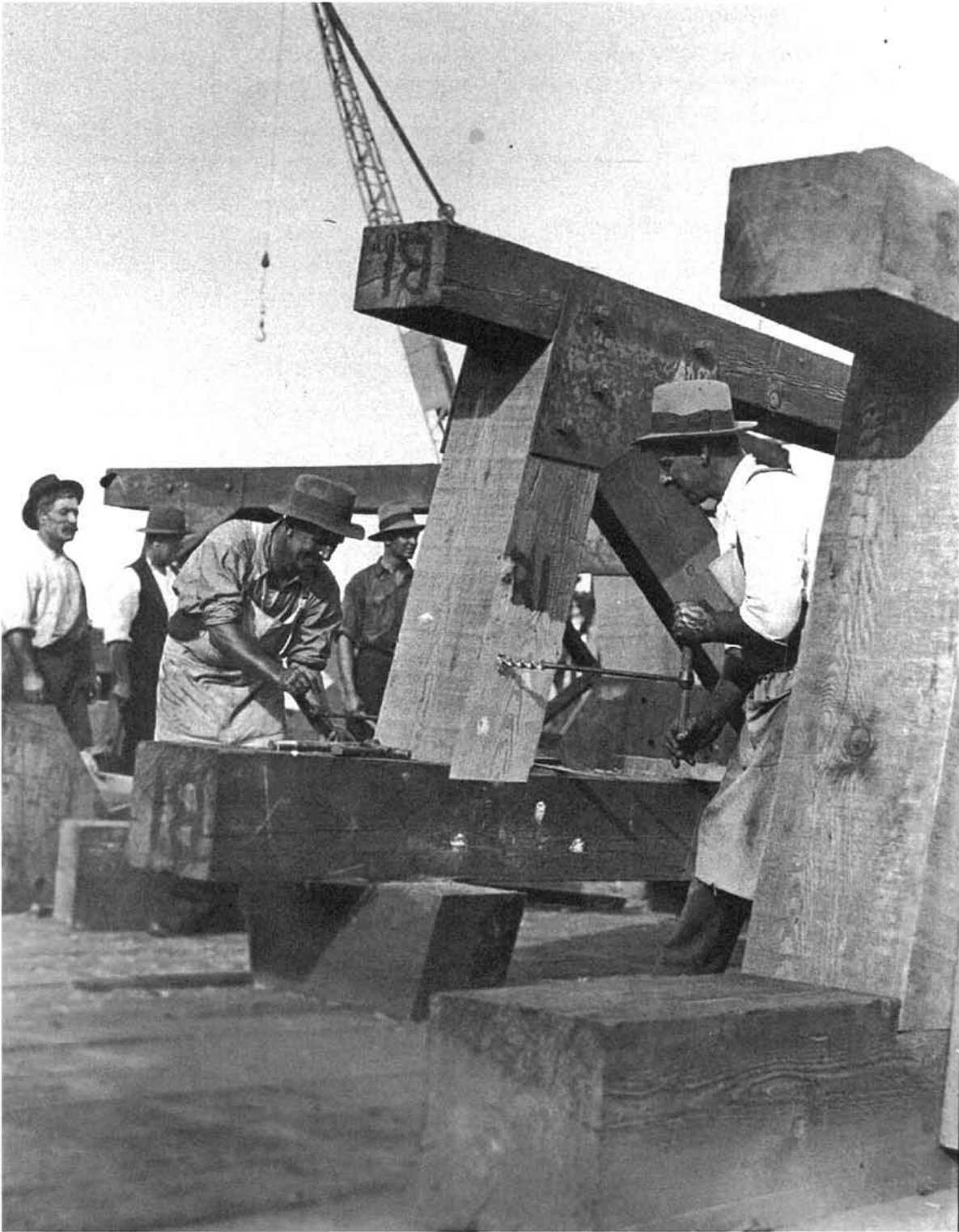
Piper, WH, ganger (LD 22 Feb 32)

Piper, William Morton, riveter; boilermaker in years 1927-1931 (BC1b; RR 82 tape 24)

Pitt, GEK, ME, engineer draftsman, PWD head office staff for main arch span, approach spans and pylons (RR 89 p. 126; SHB&A; SHBDL)

Potter, OS, PWD engineer (DMR 82; RR 00; WRK26)

Powys, Owen L, BE, engineer draftsman, PWD head office staff for main arch span, approach spans and pylons; went to London under Stuckey to check Freeman's office's calculations (RR 82 tape 22; SHB&A; SHBDL; RR 00)



CARPENTERS: BILL O'BRIEN

Many men came from the bush and, like Bill O'Brien, brought their own tools.

O'Brien earned £7/15/- a week, a lot compared to the £3 earned by road workers.

The carpenters erected falsework so that they could build the approach spans and the pylons' masonry arches.

Photographer: Robert Bowden. Source: RR 82 tape 12.

Preston, T, BE, engineer draftsman, PWD design office staff for approaches, tunnels, railway stations, concrete arches, retaining walls, subways, stairways and roadways (RR 89 p. 126; SHB&A;)

Price, G, ganger (LD 22 Feb 32)

Price, T, ganger (LD 22 Feb 32)

Purcell, Theo, (1878–1956), press photographer who shot Premier Jack Lang cutting the ribbon, 19 March 1932

Pyne, Cyril E, engineering draftsman, MRCB

Quinlan, T, ganger (LD 22 Feb 32)

R–S

Ramsay, William, Boilermaker, Scotland.

Ranken, RL, supervising staff, PWD (SHBDL)

Ray, Ernest Albert, boilermaker, marker-off in the years 1923–1931 (BCIb)

Raymond, H, ganger (LD 22 Feb 32)

Read, R, assistant engineer RFO London (DL 32)

Reardon, Arthur (aka Riordan), blacksmith and union representative, Dorman Long workshop; born in Ireland; ‘a giant’ (E&R; RR 82 tapes 5,10)

Rees, Charles, dogman (RR 82 tape 30)

Renton, Charles, engineering draftsman, MRCB

Richardson, Scottie, boilermaker; born in Ireland (RR 82 tape 19; RR 00) Ridley, Valentine, rigger in the years 1922–1932 (BCIb)

Ridley, Valentine, rigger in the years 1922–1932 (BCIb)

Roberts, Gilbert, BSc(Eng), AM Inst CE, consultant to Dorman Long on calculations (RR 89 p. 132; SHB&A;)

Robertson, Sydney Clifford (‘Cliff’), BSc, ME, engineer draftsman (1st grade), engaged for seven years with Railways then PWD head office staff on in checking the Bridge under Gordon Stuckey (trial calculations for main arch span, approach spans and pylons); born 1901; a talented amateur Bridge photographer; after the Bridge he joined the Department of Main Roads NSW, gained a masters degree for a thesis on airplane design at Adelaide University; served in the RAAAF as a pilot officer supervising design and modifications to Australian made craft; re-joined the DMR after the war;

in all spent over 50 years designing bridges; represented PWD on Standards Association of Australia (ML MSS 3166 1(1); MRBSC; RR 82 tape 22; RR 89 p. 126; RR 00; SHB&A; SHBDL)

Robertson, Andrew Stevenson (know as “Deaf Andy”), Boilermaker, 6th May 1927 – 2nd April 1931, Grangemouth. Scotland

Robson, Bill (‘Baldy’), concreter at North Sydney (RR 82 tape 21)

Rodd, Leonard R, workshops clerk (DMR 82)

Roels, Fred (Frederick), (1891–1939), crane driver; member of ALP central executive 1928–1931; official of Federated Engine-drivers and Firemen’s Association and president of Trades and Labor Council in 1929; MLC from Nov 1931–Apr 1934 (RR 82 tape 3; RR 00; WRK26)

Roger, William, signals electrician (?)

Roper, William H, BSc, BE, supervising engineer; in charge of PWD field staff for construction of North and South Approaches, including tunnels, railway stations, concrete arches, retaining walls, subways, stairways and roadways; ‘a gentleman yet quiet’ and a very good friend of Bradfield; called ‘George’ on RR 82 tape 15 (LD 22 Feb 32; RR 82 tape 15; RR 89 pp. 105, 126; SHB&A; SHBDL; MoS07)

Rosenthal, Wilfred, labourer (MoS07)

Ross, Florence, Dorman Long office (DMR 82; WRK26)

Ross, Robert (‘Bob’), rivet cooker working with Vic Kelly and George Scott; born in Glasgow; delegate to Federated Ironworkers (FIA); after finishing on the Bridge was on the dole (RR 82 tapes 1-2; RR 00)

Rue, given name unknown, caretaker at Dorman Long office, 6 George Street North (RR 82 tape 5; WRK26)

Rue, Jack, apprentice boilermaker, Dorman Long workshop; born in Australia; lived at the Dorman Long office, 6 George Street North where his father was caretaker; began as office boy; later was on the dole; became a welding consultant (E&R p. 52; RR 82 tapes 5–6; RR 00)

Russell, RT, supervising staff, PWD (SHBDL)

Sarolea, JR, assistant superintendent to Clarence Hipwell for steelwork erection in workshops, approach spans and arch span, Dorman Long (DL 32; SHB&A)

Savage, John Robert, stonemason (DMR 82; WRK26)

Schofield, Norm, plasterer; did a 4 coat rendering over the concrete on the northern approaches; born in Sydney; fired for refusing to kick back 10 shillings a week to the PWD 'pannikin boss' (RR 82 tape 8; RR 00)

Schoultz, Carl, ironworker; born in Finland (RR 82 tape 26)

Scott, George, ironworker holder-up on the arch and approach spans; born in Belfast; came to Australia in 1924 to work on the Bridge; later worked on the Bulolo gold dredges (RR 82 tapes 1-2; RR 89 p. 106; RR 00)

Selby, James, boilermaker, marker-off (BCIb)

Shannon, GR, drawing office staff RFO London (DL 32)

Shea, R, supervising staff, PWD (SHBDL)

Shepherd, J, ganger (LD 22 Feb 32)

Shepherd, WB, foreman in charge, PWD field staff for construction of approaches, tunnels, railway stations, concrete arches, retaining walls, subways, stairways and roadways (LD 22 Feb 32; RR 82 tapes 8,15,21; RR 89 p. 126; SHB&A; SHBDL)

Shields, AR ('Alf'), rigger; worked in the light workshop with Frenchy; used hessian bags to protect hands from steel shavings; dogman at the Milsons Point workshops; born in England (E&R; RR 82 tapes 11,12; RR 00)

Shields, given name unknown, rivet cooker at Dorman Long's heavy workshop; Alf's younger brother (E&R; RR 82;)

Shirley, Edward, carpenter; sustained fractured skull after scaffolding collapse at the Fitzroy Street arch and died four days later on 12 August 1928, married (E&R p. 160)

Shirley-Smith, H, later Sir Hubert, assistant engineer, RFO (DL 32; RR 00)

Simcoe-Fitzmaurice, HA, supervising staff, PWD (SHBDL)

Sinclair, Harry, general foreman at Dawes Point (RR 82 tapes 2,30; RR 00)

Sinclair, John, engineering draftsman, MRCB

Slack, GF, supervising staff, PWD (SHBDL)

Smith, Jack, guillotine operator (RR 82 tapes 12,17; RR 00; WRK26)

Smith, Fred, truck driver (RR 82 tape 21)

Smith, RR, BSc(Eng), engineer draftsman, PWD design office staff for approaches, tunnels, railway stations, concrete arches, retaining walls, subways, stairways and roadways (RR 89 p. 126; SHB&A; SHBDL)

Smith, Russell Yarrington, engineering draftsman, MRCB

Smith, W, inspector of fabrication, PWD field staff for fabrication and erection of steel work (SHB&A)

Smith, William George, painter (BCIb; DMR 82; WRK26)

Snow, Darkie, crane spotter to Bob Klein (RR 82 tape 3; RR 00; WRK26)

Southerland, RS, draftsman, PWD design office staff for approaches, tunnels, railway stations, concrete arches, retaining walls, subways, stairways and roadways (RR 89 p. 126; SHB&A)

Stapelton, Robert, engineering draftsman, MRCB

Stenson, Ivan, rivet heater and catcher; later became gantry driver in a hydraulic riveting gang; born in Australia; organised chook raffle; when laid off he was still too young to get the dole (ABC 82; RR 82 tape 7; RR 00)

Stenson, Vincent George Ormsby, Ironworkers assistant, 14th March 1928 – 24th August 1928, Johannesburg, South Africa

Stephen, John A, clerk (DMR 82; WRK26)

Stephenson, Jock, riveter (RR 82 tape 11; RR 00; WRK26)

Stewart, Alec, riveter (RR 82 tape 16; RR 00; WRK26)

Stewart, F, supervising staff, PWD (SHBDL)

Stewart, Frederick Fry, engineer draftsman, PWD design office staff for approaches, tunnels, railway stations, concrete arches, retaining walls, subways, stairways and roadways (LD 22 Feb 32; MRBSC; RR 89 p. 126; SHB&A; SHBDL)

Stewart, JA, engineer draftsman, PWD design office staff for approaches, tunnels, railway stations, concrete arches, retaining walls, subways, stairways and roadways (SHB&A)

Stobart, George, boilermaker (RR 82 tape 1; RR 00; WRK26)

Stringfellow, Horrie, boilermaker's assistant (RR 82 tapes 7,11; RR 00; WRK26)

Stringfellow, Jim, boilermaker's assistant (RR 82 tapes 7,11; RR 00; WRK26)

Stuart, JA, draftsman, PWD (RR 89 p. 126; SHBDL;)

Stuckey, Gordon A, BSc, ME, principal designing engineer for the Dorman Long contract; in charge of PWD head office staff of ten to fifteen engineers working on design, checking of stresses, working drawings, calculations and erection schemes for the main arch span, approach spans and pylons, Recalls Ennis calling "get 'em off" after the final deflection test and not waiting for a photo op. Later specialised in sewerage treatment works (RR 82 tapes 1,21,22; RR 89 p. 126; SHB&A; RR 00)

Sullivan, L, ganger (LD 22 Feb 32)

Swan, Robert, boilermaker (DMR 82; DT82)

Swondels (Swandells), Nathaniel, aka Edward McNeil, boilermaker's labourer; born in Scotland; killed by a fall while riveting on approach pier, 6 December 1927, aged 22 (E&R p. 160; RR 00)

T-U-V-W-X-Y-Z

Tait, Thomas S, consulting architect to Dorman Long on Pylons and piers; a partner in the leading London architectural firm of Sir John Burnet, Tait and Lorne. In designing the pylons, Tait drew on the Roman cenotaph form and on the iconography of Egyptian monuments and skyscraper styles to symbolise the British Empire's mourning for those who had died in the Great War (Thesis, RR 00)

Tait, WD, ganger (LD 22 Feb 32)

Tarlington, Bill, concreter on the northern approaches; lost one finger in an accident and with the compensation repaid his mother for her support when he was out of work (RR 82 tape 21; RR 00)

Thomas, AW, engineer draftsman, PWD design office staff for approaches, tunnels, railway stations, concrete arches, retaining walls, subways, stairways and roadways (RR 89 p. 126; SHB&A)

Thomas, Les, concrete packer (RR 82 tape 3; RR 00; WRK26)

Thompson, Dave, boilermaker's assistant (RR 82 tapes 7,11; RR 00)

Thompson, Joe; boilermaker's assistant; brother to Dave Thompson, (RR 82 tapes 7,11; RR 00)

Thompson, JA, cashier, Dorman Long administration (DL 32; SHB&A)

Thompson, Sam, assistant superintendent to Henry Martin, fabrication of structural steelwork, Dorman Long (DL 32; RR 82 tape 20; RR 00; SHB&A)

Thompson, Sid, trade unknown (RR 82 tape 14)

Thorley, H, ganger (LD 22 Feb 32)

Throsby, CPT, BE, BSc, engineer draftsman, PWD head office staff for main arch span, approach spans and pylons (SHB&A; SHBDL)

Tinker, Frank, born in England; brought out by Dorman Long to operate the end planer (RR 82 tapes 1,17; RR 00)

Tomrop, Harry, (1891–unknown) rigger-erector, worked on rigged planes in WWI and on New York skyscrapers; one of the 12 'tin hares' who positioned all the steelwork on the Bridge; born in Russia; became a naturalised Australian in 1912; delegate to Federated Ironworkers (FIA); gave evidence on job conditions to Arbitration Commission (RR 82 tapes 4,14,15; RR 89 pp.105–7, 119; RR 00)

Tucker, Ben, boxman rigger; charge hand of the 'tin hares' gang of steel erectors; Harry Tomrop's boss; born in England (RR 82 tape 14; RR 00)

Tully, H, supervising staff, PWD (SHBDL)

Turnbull, AP, supervising staff, PWD (SHBDL)

Turnbull, James, son of Robert; worked on Bridge for 30 years; retired 1990 with lead poisoning (MLOH)

Turnbull, Robert, (1892–1940); from Dumbarton, Scotland and worked in Clyde shipyards; leading hand; ironworker's assistant; boilermaker in heavy shop, years 1927–1931; present at joining of arch and signed special paper commemorating that occasion (BCIb; MLOH)

Turra, Joe, boilermaker's assistant (RR 82 tape 7; RR 00; WRK26)

Urquhart, NC, supervising staff, PWD (SHBDL)

Unwins, JE, ganger (LD 22 Feb 32)

Vasiere, Henry ('Harry'), dogman and rivet catcher; born in England; had been paid off a British ship and later returned to sea (RR 82 tape 11; RR 00)

Vernon, D, supervising staff, PWD (SHBDL)



PAINTERS: FINISHING THE SECOND COAT

Perched on scaffolding, precarious cages and bosun's chairs, they began painting the steelwork in 1927. The first coat was finished on 31 August 1931. They took a year to coat the Bridge's 485,000 square metres of steel with 80,000 litres of paint (about 600 tonnes).

The second was finished in record time for the grand opening. Then they start again.

Source: DR Frazer, photographs of the Sydney Harbour Bridge, 1925–1932, ML SLNSW.

Villagrand, Frank, carpenter; born in Woolloomooloo 1899 worked on form work for the approaches, concrete roads and parapet walls, north side, including Milsons Point station. (RR 82 tape 15; RR 89 p. 105; RR 00)

Vincent, Oscar, chief industrial officer, Dorman Long administration (SHB&A; RR 82 tape 11; RR 00)

Vincent, William, engineering draftsman, MRCB

Von Linder, foreman to the sleeper cutters including Peter Meichen (RR 82 tape 15; RR 00; WRK26)

Walker, HD, supervising staff, PWD (SHBDL)

Wallace, Cecil D, designing engineer, MRCB

Walsh, Frank, carpenter (DMR 82; WRK26)

Walton, EL, supervising staff, PWD (SHBDL)

Waterworth, R, ganger (LD 22 Feb 32)

Watt, George, Scottish stonemason (see Ganite list)

Webb, John Henry, painter; born in England; fell 40 metres from cross girder inside south pylons to his death on 31 July 1931, aged 23 (E&R p. 160)

Webb, Sam, crane driver (RR 82 tape 3; RR 00; WRK26)

Webster, Marjorie (nee Delaney), clerk (DMR 82)

Wheeler, Joe, wharf crane driver (RR 82 tape 3; RR 00)

White, AR, supervising staff, PWD (SHBDL)

Whitehead, Billy, apprentice boilermaker, Dorman Long workshop

Whitehead, 'Bluey', ironworker; 'used to fancy himself as a strong man'; 'used to pick up bags of rivets with his teeth' (E&R; RR 82 tapes 5,10)

Wilde, Sydney, rivet catcher (MoS07)

Wilkinson, EF, chief accountant, Dorman Long administration (DL 32; SHB&A;)

Wilkinson, Vic, creeper crane driver, worked with steelwork erection in workshops, approach spans and arch span, Dorman Long (RR 82 tapes 3,14; SHB&A)

Willett, W, drawing office staff, RFO London (DL 32)

Williams, Jack, head rigger (RR 82 tape 30)

Williamson, George Oliver, Carpenter, Glasgow, Scotland

Williams, Jack, head rigger (RR 82 tape 30)

Willis, D'Arcy, engineering draftsman, MRCB

Wilson R, inspector of fabrication, PWD field staff for fabrication and erection of steel work (SHB&A)

Wiltshire, JE, supervising staff, PWD (SHBDL)

Worger, Herbert William, Ironworker, New Zealand

Wooldridge, William Arthur (1892–1964), sailed from England to keep time on the Bridge in December 1924; 12 months later he was leading paymaster; in July 1933 one of the last to finish of the Dorman Long administration; his ashes were scattered from the Bridge (SHB&A; BC1b)

Woodfield, George, rigger, friend of Jack Pearson (identified verso Pearson photo collection)

Woodhouse, Richard Karl Ellis, BE, supervising engineer with PWD field staff for construction of approaches, tunnels, railway stations, concrete arches, retaining walls, subways, stairways and roadways, north side. (LD 22 Feb 32; MRBSC; RR 89 p. 126; SHB&A; SHBDL)

Woods, William, ironworker; holder-up; born in Scotland; killed by fall of over 20 metres from an approach span gantry on 24 February 1928, aged 42 (E&R p. 160; RR 82 tape 1)

Wooley, Arthur, engineering draftsman, MRCB

Wortley, Ralph, engineering draftsman, MRCB

Wright, Ted, dogman, ironworker, Milsons Point wharf

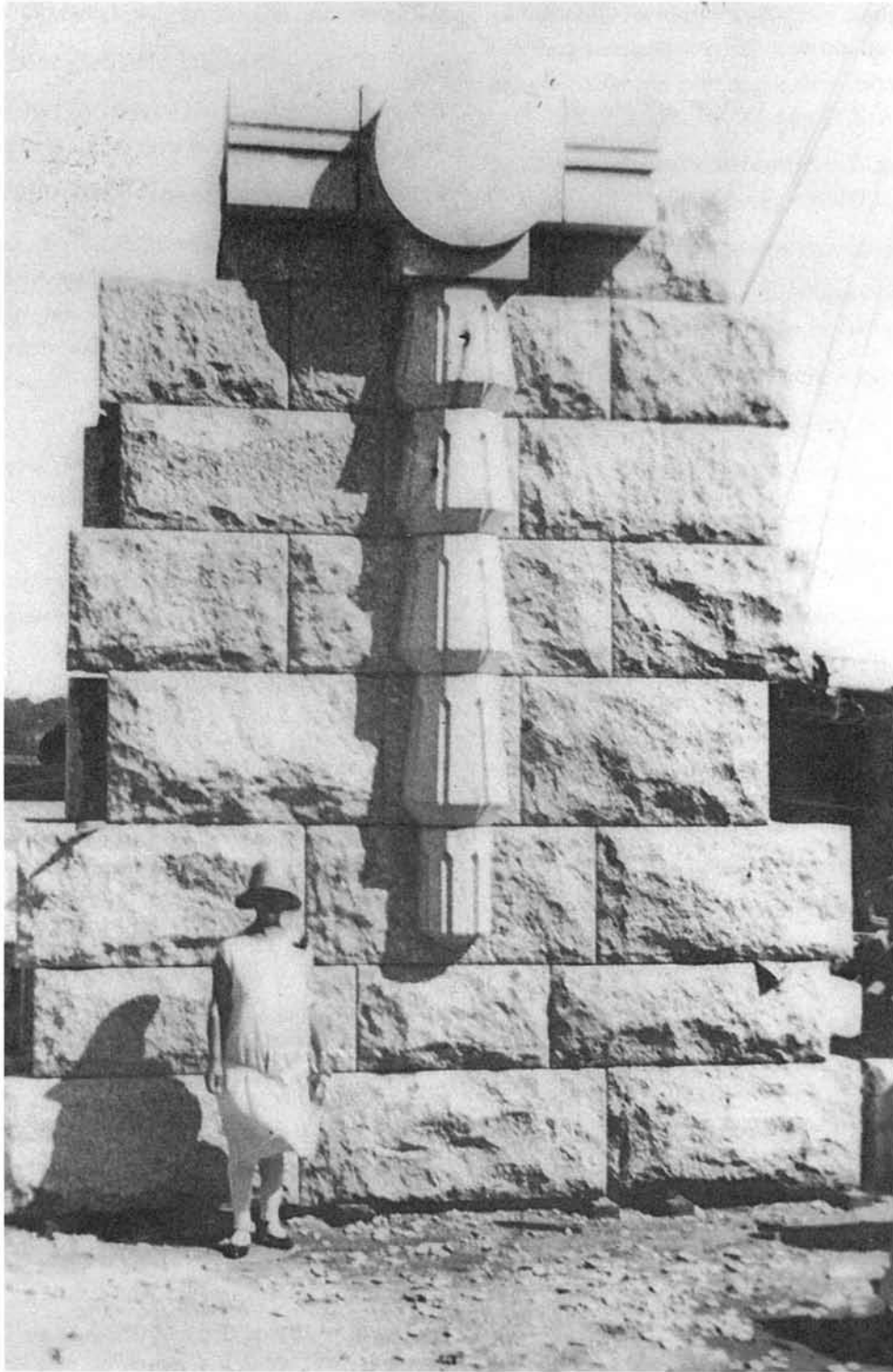
'Yank, The', name unknown, boilermaker; operated the Milson Point workshop's steel cutting mangle (plate straightening) with great precision; fire eater (RR 82 tape 10; RR 00)

Yates, Johnny, holder-up (RR 82 tape 14; RR 00; WRK26)

Young, Percy, pylon dogman (RR 82 tape 2; RR 00; WRK26)

Zambuk, 'Dr Zambuk', first aid man at Dawes Point (RR 82 tape 4; RR 00)





GRANITE: DRESSED STONES

The masons' work was so accurate that mortar was scarcely needed.

Test assemblies proved the accuracy of the work before shipment to the Bridge.

Molly Henderson poses in her Sunday best on the Moruya River dock.

Photograph courtesy Nell Greig, Moruya.

GRANITE: *the strongest and most beautiful stone ...*

GRANITE TOWN, WORKERS 1924–1932

Bradfield specified that the contractors face the abutment towers and Pylons with expensive granite, commending its durability. The government made its granite quarry on the Moruya River, near Moruya on the South Coast of NSW, available to Dorman Long and work started on 18 November 1924.

John Gilmore, an Aberdeen stonemason, managed the Moruya granite quarries. Gilmore's team established a unique community. They built family homes, single-men's dormitories, masons' sheds, offices, an engine room, railway tracks, a wharf and a crushing plant. Dorman Long installed machinery, built a co-operative store and opened a schoolhouse. They called it Granite Town. At full strength, the payroll listed 240 men and a few women office workers. As not enough local masons were available, Dorman Long secured the Operative Stonemasons' permission and recruited 50 Scottish and Italian masons. Thirteen nationalities were represented in the 250 strong quarry workforce.

By the time work tapered off in 1931, the men had quarried, cut, dressed, numbered and despatched approximately 40,000 dimension stones. Before loading the masons cut and numbered each stone in order and laid it out on the quarry floor, to make sure that it fitted.

The Depression and change of government destroyed their hopes for other markets for 'sparkling' Moruya granite. When the quarry closed, the cottages were sold, but one remains on site. At the quarry site the John Gilmore Pavilion retells the quarry's history, the Moruya Museum exhibits artefacts and photographs, and a granite memorial was raised in 2002.

A–B

Abbattista, Sergio ('Serge'), stonemason; married a local, Constance, becoming husband and father on the same day (CG 98 p. 47; GR p. 23; MBC 97 p. 18; MQW 95)

Adalfa, given name unknown, stonemason; Italian (CG 98 p. 47; MBC 97 p. 18; MQW 95)

Aitken, Bill, powder monkey; operated big drilling machine made by Engersol Rand (CG 98 p. 48; MQW 95)

Aitken, Robert ('Bob'), quarryman apprentice; engineer (CG 98 p. 48; GR p. 25; MQW 95)

Allan, George, stonemason; stonecutter born in Aberdeen; taught by Mrs Gilmore in Kemnay; went back to Scotland but returned to Australia and worked on Snowy Mountains scheme; married Mary Clark; place getter in garden competition for Dorman Long tenants (CG 98 pp. 47, 58; GR p. 5; MGQ BR 97 p. 109; MQW 95; photo no. 21; RR 82 tapes 17 18; SHBB p. 11)

Allan, Forbes Christi, from Scotland; quarryman (CG

98 p. 48; GR p. 8; MQW 95; RR 82 tape 18; SHBB p.11; WRK26)

Allen, Spud, stonemason (MQW 95)

Amato, Michael, stonemason; Italian; advertised his intention to apply for naturalisation; married a Bodalla girl, Mary Ann; moved to South Australia (CG 98 p. 47; GR p. 23; MBC 97 p. 18; MGQ BR 97 p. 104; MQW 95)

Amato, Sergio, stonemason; Italian; returned to Italy in July 1927 to bring back his bride (MGQ BR 97 p. 104; MQW 95)

Anderson, given name unknown, stonemason (CG 98 p. 47; MQW 95)

Anderson, Percy, plate layer; labourer (CG 98 p. 49; GR p. 21; MQW 95)

Ball, Bill, quarry labourer (MQW 95)

Ball, Glyndon Patrick Richard ('Glyn'), spawler (CG 98 p. 48; GR p. 12; MQW 95; SSX 01)

Ball, James Waldron, stonemason (GR p. 5)

Ball, Thomas James, stonemason (GR p. 12)

Banker (Bunker), given name unknown, stonemason (CG 98 p. 47; MQW 95; SSX 01)

Barbieri, given name unknown, stonemason; Italian; a man of commanding presence; operatic singer; married (CG 98 p. 47; MBC 97 p. 18; MQW 95)

Barbour, Charlie, stonemason (CG 98 p. 47; SSX 01)

Barling, George Albert, quarry labourer (CG 98 p. 48; GR p. 21; MQW 95)

Barron, Ernest ('Ernie'), carpenter; with Harry Dunne built the Granite Town community hall; married Annie (CG 98 p. 49; GR p. 8; MBC 97 p. 35 MQW 95)

Barry, Ron, stonemason (MQW 95)

Baskett, George William (Snr), in the engineering department; assistant to Dave Campbell; fireman (boilerman); married Amy (CG 98 p. 49; GR pp. 12; MBC 97 p. 23; MQW 95)

Batt, Thomas ('Tom'), tinsmith (MQW 95)

Beathe, Henry David ('Harry'), spawler; married Ellen Jane (CG 98 p. 48; GR p. 12; MQW 95)

Beddie, James John, stonemason; married Mary (CG 98 p. 47; GR p. 8; MQW 95; SSX 01)

Benzie, Andrew John ('Andy'), stonemason, place getter in the Dorman Long garden competition (CG 98 p. 47; GR p. 8; MGQ BR 97 p. 109; MQW 95)

Benzie, William Alexander ('Bill'), stonemason; with Joe Wallace cut inscription on Cenotaph stone (CG 98 pp. 47, 58; GR p. 8; MGQ BR 97 p. 92; MQW 95)

Bettini, Henry James, watchman (CG 98 p. 49; GR p. 21; MQW 95)

Bishop, Gregory Hilton, carpenter (CG 98 p. 49; GR p. 21; MQW 95)

Bishop, Victor Bede ('Vic'), ganger; a local (CG 98 p. 49; GR p. 12; MBC 97 p. 13; MQW 95)

Breen, John Austin, office manager after Stanton Lizieri left (CG 98 p. 48; GR p. 21; MBC 97 p. 37; MQW 95; RR 82 tape 30)

Brierley, Walter, crane dogman, married Catherine Josephine (CG 98 pp. 46, 49; GR p. 12; MQW 95)

Bruce, Alexander, quarry labourer; married Helen Aiken; installed Granite Town's first wireless set, constructed by Bob Colefax (CG 98 p. 48; GR p. 5; MGQ BR 97 p. 115; MQW 95)

Bruce, David Mathieson ('Dave'), stonemason; stonecutter (CG 98 p. 47; GR p. 8; MQW 95)

Bruce, G, stonemason (CG 98 p. 47; SSX 01)

Bruce, James McCombie ('Jimmy'), stonemason (CG 98 p. 47; GR p. 5; MQW 95)

Bunker, Wilfred, stonemason; married Olive Rose (GR p. 8)

Burch, Edward ('Ted'), watchman (CG 98 p. 49; MQW 95)

Butler, Thomas, quarry labourer, who crushed his hands and strained his lungs when a granite slab was 'dropped'. He never worked again, and as an Aboriginal he could not get a pension, so the Moruya folk chipped in to help his 7 children (MR: letter, Marjorie Timbery, La Perouse, June 1982)

C-D

Cad(d)iccio (Cudicio), Fueravante (Fiorovanti), stonemason; Italian. When Premier Lang commissioned a cenotaph outside the Post Office in Martin Place, designed by Bertram MacKennal, JJC Bradfield selected Moruya granite. Reg Saunders remembered that Caddiccio 'worked furiously and had the honour of being sent to Sydney' to prepare the memorial stone for the dedication in 1927. Caddiccio was photographed at the Moruya Quarry with the block from which the 23 stones of the cenotaph were cut. (CG 98 pp. 47, 58; MBC 97 p. 18; MGQ BR 97 pp. 91-2; MQW 95; RR 82 tape 18; RTA Photo 31315)

Cameron, Chinner, stonemason (CG 98 p. 47; MQW 95)

Cameron, Douglas George, stonemason (apprentice); married Elsie (GR p. 20; MEX; MQW 95)

Cameron, John, stonemason (dunter); stonecutter (CG 98 p. 48; GR p. 6; MQW 95)

Cameron, William, stonemason; stonedresser; married Mary Jane (GR p. 8; MQW 95; photo no. 42)

Campbell, Alexander ('Alex'), stonemason; stonecutter; married Annie; performed with Bill Lawrie at concerts as comic duo, 'Flick and Mick' (CG 98 p. 47; GR p. 8; MBC 97 p. 35; MQW 95)

Campbell, Dave (Snr), senior engineer; assembler of the steam cranes; later responsible for provision of the water supply; from Scotland; father of Davy (CG 98 p. 49; MBC 97 p. 23; MQW 95)

Campbell, Davy, crane driver; son of Dave; Bob Colefax has never seen 'such superlative crane-driving skill ... perfect reflexes and timing, he could almost make that old crane talk. It was common to see him handling a multi-ton granite block with all three motions operating simultaneously at breathtaking speed.' (CG 98 p. 49; MBC 97 pp. 22–3; MQW 95)

Campbell, Frank, first driver of the 15 ton crane; became a farmer at Yarragee (MBC 97 pp. 20–1; MQW 95)

Campbell, H, crane driver (CG 98 p. 49; SSX 01)

Campbell, Jock, crane driver in the yard (RR 82 tape 20; SHBB p. 11; WRK26)

Caputs (Caputi), given name unknown, stonemason (CG 98 p. 47; MQW 95)

Carden, Arthur Basil, quarry labourer (CG 98 p. 48; GR p. 21; MQW 95)

Carden, Phillip Frederick ('Phil'), replaced Bill Smith as storekeeper for the quarry works' store; a Moruya local; married Margaret Mary Philomena (CG 98 p. 48; GR p. 12; MBC 97 pp. 10, 11, 36; MGQ BR 97 pp. 122–3; MQW 95)

Carr, Andrew John Smith ('Andy'), blacksmith; labourer (CG 98 p. 49; GR p. 8; SSX 01)

Carr, James, carpenter (WRK26)

Carter, John, first teacher at Granite Town Public School, September 1926 (CG 98 p. 53)

Charlton, Rowland, crane driver; English; married Ethel May (CG 98 p. 49; GR p. 12; MBC 97 p. 20; MQW 95)

Christie, John Morran, blacksmith; married Kate (CG 98 p. 49; GR p. 8)

Christie, Jock, tool sharpener blacksmith; from Scotland (MBC 97 p. 12; MQW 95)

Clinton, Jeffrey Phillip ('Jeff'), machine fitter (CG 98 p. 49; GR p. 25; MQW 95)

Clulee, Bill, stonemason (apprentice); sent to Sydney for treatment of an injury received when 'a piece of steel entered his body', 1931 (CG 98 p. 48; MCMP p. 49; MGQ BR 97 p. 100; MQW 95)

Clulee, George, stonemason (apprentice); a local (CG 98 p. 48; MBC 97 pp. 18–19; MQW 95)

Cochrane, Charlie, stonemason (apprentice); from

Scotland; operated the surfacing machine; worked on the Cenotaph stone (CG 98 p. 48; MBC 97 p. 20; MQW 95; RR 82 tapes 18,20; SHBB p. 12; WRK26)

Cochrane, William, stonemason (dunter); cut stone for the Cenotaph, Martin Place; married Catherine; his autobiography is with the State Library of NSW; place getter in the garden competition for Dorman Long tenants (CG 98 p. 48; GR p. 8/9; MGQ BR 97 p. 109; MQW 95; RR 82 tapes 18 20; SHBB p. 12)

Coe, Captain Richard, chief officer of one of the three steamers, *Sir T Hugh Bell*, built to carry quarry stone to Sydney (MBC 97 pp. 29, 31; MGQ BR 97 p. 70)

Colefax, Aubrey Verner ('Bob'), clerk for Dorman Long; born in Moruya; son of William; worked on Moruya office staff as paymaster, subsequently on the Bridge construction at Dawes Point as timekeeper; constructed Granite Town's first wireless set; secretary of the organising committee for a sports day to benefit the local hospital, 1926; has written several lively local histories including *Moruya's Golden Years*; attended 50th anniversary celebrations of Bridge's opening (CG 98 p. 44; GR p. 6; MBC 97 pp. 1, 10, 28; MGQ BR 97 pp. 90, 99, 115; MQW 95; RR 82 tapes 1 18 20; SHBB p. 2)

Colefax, William James, timekeeper; office staff; father of Bob (CG 98 p. 44; GR p. 6; MBC 97 pp. 1, 5, 28; MQW 95)

Collett, Harold Duross, stonemason (apprentice); (CG 98 p. 48; GR p. 21; MBC 97 p. 18; MQW 95)

Collie, John ('Johnny'), stonemason (apprentice); stonedresser; married Annie (GR p. 9; MEX)

Connell, Henry ('Harry'), crane driver; married Catherine Mary of the local Bartlett family (CG 98 p. 49; GR p. 12; MBC 97 p. 21; MQW 95)

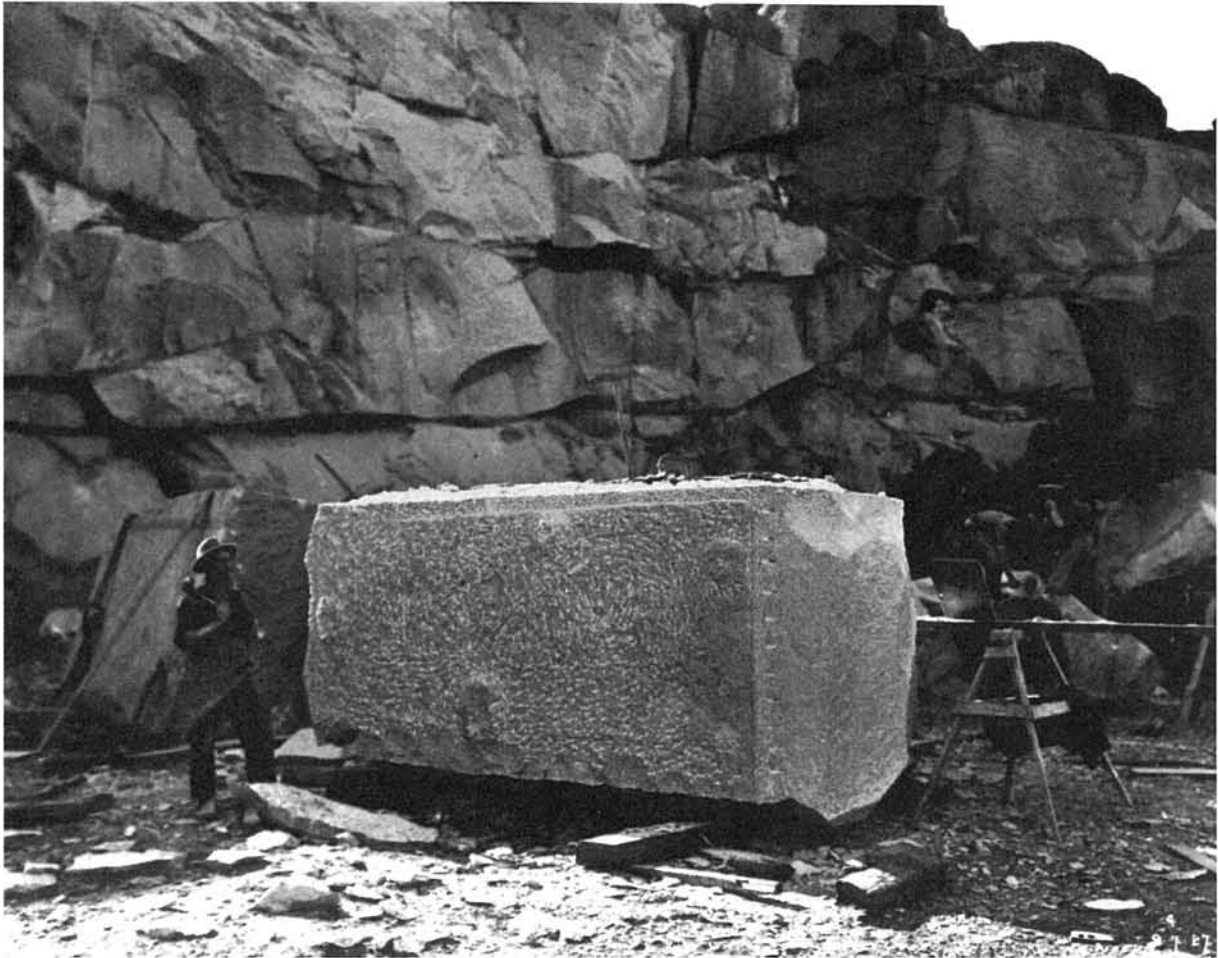
Constable, Arthur John, crane driver; a local; married Ellen (CG 98 p. 49; GR p. 12; MBC 97 p. 20; MQW 95)

Constable, William Francis ('Bill'), quarry labourer; married Olive Estelle Henrietta (CG 98 p. 48; GR p. 12; MQW 95)

Cook, Mollie, clerk, typist in site office (ABC 82)

Cooley, Henry ('Harry'), crane dogman; married Sarah (CG 98 p. 49; GR p. 12; MQW 95)

Coppin, William Richard ('Bill'), spawler; in his sixties (CG 98 p. 48; GR p. 12; MBC 97 pp. 26–7; MQW 95)



STONEMASONS: FUERAVANTE CADDICCIO, 1927

Premier Lang commissioned a cenotaph outside the Post Office in Martin Place.

Bradfield selected the Moruya granite and Bertram MacKennal, the eminent expatriate sculptor, designed a memorial to the Anzac soldiers, sailors and nurses.

Bridge stonemason Fueravante Caddiccio poses in this photo taken at the Moruya Quarry with the block from which the 23 stones of the cenotaph were cut. Reg Saunders remembered that Caddiccio 'worked furiously and had the honour of being sent to Sydney' to work on the memorial. Stonecutters William Benzie and Joe Wallace carved 'Our Glorious Dead' in the altar stone.

The cenotaph was dedicated in 1927.

Photographer: Robert Bowden, 9 July 1927. Source: RTA 31315.

Corbett, Edward Patrick, quarry labourer, assembling crusher bins in early days; married Catherine Mary (dressmaker) (CG 98 p. 48; GR p. 13)

Corrigan, Oswald William Edward ('Bill'), quarry labourer (CG 98 p. 48; GR p. 13; MQW 95)

Cowgill, J, stonemason; started a music class (CG 98 p. 47; MGQ BR 97 p. 110; MQW 95)

Cox, Robert Henry, stonemason; married Helena Hilda (GR p. 9)

Craik, Alexander, stonemason; married Jane (CG 98 p. 48; GR p. 9; MQW 95)

Crapp, Bob, quarry labourer, striker (CG 98 p. 48; MQW 95)

Crapp, Reg, see Saunders

Cregan, John William ('Jack' {'Iron Man'}), spawler; married Mary Agnes (CG 98 p. 48; GR p. 13; MBC 97 pp. 26-7; MQW 95)

Crisp, Robert, stonemason (CG 98 p. 47; SSX 01)

Crofts, Harry, assistant teacher, 1931, at Granite Town Public School (CG 98 p. 53; MGQ BR 97 p. 119)

Cruikshank, Angus, stonemason, one of four masons who fixed granite on the pylons (see Steel entry)

Cruikshank, James ('Jim'), stonemason; stonecutter; from Scotland; also worked on the Pylons (GR P. 6; RR 82 tape 20; SHBB p. 11; RR 00; WRK26)

Cudicio see Cad(d)iccio

Cudmore, F, fitter (MQW 95)

Daley (Daly), Keith, blacksmith's striker (MBC 97 p. 13; MQW 95)

Daren, Victor, quarry labourer; grindstone (CG 98 p. 48; MQW 95)

Davidson, Archibald ('Archie'), foreman in charge of producing the rough granite from the quarry; store inspector; from Aberdeen; lived with his wife, Mary Ann, and two daughters in Page Street in the same house as William Morrison and his family; after six years at the Moruya quarry he returned to Scotland where soon afterwards he was killed by a fragment of flying rock during blasting at his quarry job there (CG 98 pp. 31, 48; GR p. 13; MBC 97 pp. 3-4, 10, 36; MQW 95; RR 82 tape 18)

Davidson, Mary Isabel ('May'), office staff; postmistress; daughter of Archie Davidson (CG 98 p. 48; GR p. 13; MBC 97 pp. 28, 36; MGQ BR 97 p. 126; SSX 01)

Davidson, Skipper, quarryman (MQW 95)

Davidson, William, quarryman; quarry labourer; working 'mate' of Percy Poole when Poole was killed (CG 98 p. 48; GR p. 27; MGQ BR 97 pp. 99-100; RR 82 tapes 17,18; SSX 01)

Davis, William, quarryman (CG 98 p. 48; GR p. 13; MQW 95)

Day, John Shuttleworth, engineer; married Beatrice Annie (GR p. 9)

Donald, William Dysart, granite cutter; married Agnes Gray (GR p. 9)

Donnelly, Sly, quarry labourer (MQW 95)

Doughty, William ('Harry'), stonemason (dunter); from South Australia; an accomplished comedian at concerts (CG 98 p. 48; MBC 97 p. 15; MQW 95; GR p. 29)

Douglas, David James, blacksmith (CG 98 p. 49; GR p. 13; SSX 01)

Duncan, given name unknown; lived next to the Ogg family (SC p. 5)

Duncan, Thomas Mellis ('Tommy'), stonemason; stonedresser; married Lizzie (CG 98 p. 47; GR p. 9; MQW 95; SSX 01)

Dunne, Henry ('Harry'), foreman carpenter; also adept as fitter and turner, blacksmith, welder, motor mechanic, bricklayer, mill-wright, saw-doctor ...; Bob Colefax has 'never known a more versatile man'; from Batemans Bay; designed and worked on the construction of the Granite Town cottages; with Ernie Barron built the Granite Town community hall (CG 98 p. 49; GR p. 21; MBC 97 pp. 8, 31-2, 35; MGQ BR 97 p. 101; MQW 95)

E-F

Ebzery, William (Jnr), quarry labourer (CG 98 p. 48; GR p. 25; MQW 95)

Egan, James Timothy ('Jim'), carpenter; worked on the Granite Town cottages; from Batemans Bay (CG 98 p. 49; GR p. 21; MBC 97 p. 8; MGQ BR 97 p. 101; MQW 95)

Egan, Marjorie, assistant teacher, 1929, at Granite Town Public School; succeeded Mrs McIlroy; only lasted a few weeks (CG 98 p. 53; MGQ BR 97 p. 119)

Elliott, Edgar Crackston; stonemason (GR p. 9)

Ernie, family name unknown, quarryman; Scandinavian distance runner (CG 98 p. 48; MQW 95)

Eva, John Henry, stonemason (GR p. 5)

Farrell, John, headmaster at Granite Town Public School 1928–31, rode his bike to school each day; received an allowance to clean the school (CG 98 p. 53; MBC 97 p. 35; MGQ BR 97 pp. 118, 119)

Feggans, John, quarry labourer; married Janet; brother-in-law of Brownie McKenzie (CG 98 p. 48; GR p. 9; MQW 95)

Finlay, given name unknown, quarry labourer; Irishman (MQW 95)

Fitch, R, carpenter (CG 98 p. 49)

Fitzpatrick, Samuel ('Sam'), offsider in the engineering department; labourer; married Josephine Muriel (CG 98 p. 49; GR p. 13; MQW 95)

Flanagan, William ('Bill'), ganger; a local (CG 98 p. 49; GR p. 21; MBC 97 p. 13; MQW 95)

Fraser (Frazer), R ('Bob'), quarryman (CG 98 p. 48; GR p. 29; MBC 97 p. 15; MQW 95)

Ford, John, teacher at Granite Town Public School (CG 98 p. 53)

Fordyce, William ('Bill'), stonemason (CG 98 p. 47; GR p. 9; MQW 95)

G–H

Galloway, Andrew Watson ('Andy'), blacksmith; quarry labourer; married Annie White (CG 98 p. 48; GR pp. 13, 24; MQW 95)

Geddes, Peter Bain ('Pat'), stonemason; stonecutter; arrived from Scotland with his wife and small son called Sandy (CG 98 p. 47; GR p. 9; MGQ BR 97 p. 105; MQW 95)

Gerard, William, stonemason; instructor for apprentices (CG 98 p. 44; RR 82 tape 18; SHBB p.12; WRK26)

Gerrard, Arthur Knoss, stonemason; stonecutter; secretary, 1926, of the Granite Town Progress Association; married Ina Smith; instructor at a Boys Club, 1927, and started an Athletic Club (CG 98 pp. 47, 52; GR p. 6; MGQ BR 97 pp. 104, 114; MQW 95)

Gibson, John Edmond, quarry labourer; married Violet (CG 98 p. 48; GR p. 9; MQW 95)

Gill, William, crane driver (GF p.6)

Gilmore, Helen ('Nell'), daughter of the quarry

manager; married local ironworker James Rankin Greig; and, although she never worked at the Quarry, her observations and photographic archive made her keeper of the Quarry's history (HG 02)

Gilmore, John (Jnr) ('Johnnie', 'Jock'), (1907–1984), stonemason (apprentice); launch driver; son of the quarry manager; born in Kemnay, Scotland; died in Rockhampton; a keen photographer who documented the works (CG 98 p. 48; MBC 97 pp. 20, 32; MQW 95; RR 82 tape 20; SHBB p.12; WRK26)

Gilmore, John Alexander (Snr), (1877–1965) mason and quarry manager; from Aberdeen; selected from many applicants responding to an advertisement placed throughout the English-speaking world; had previously managed quarry work for the British Admiralty; with his wife, Mary Agnes, one son and eight daughters lived at Tuffwood, across the river from the Moruya quarry. At Moruya's celebration of the closing of the Bridge's half-arches on 4 September 1930 Gilmore said that 'although our works at Moruya is Dorman Long's first venture in granite we hope it will not be their last'. Gilmore later worked as an overseer for the Department of Main Roads. Tuffwood was demolished in 1997. ('Family Story from Scotland to Moruya', Canberra Times, 4 Jan 1989; CG 98 pp. 48, 78, 82–4; MCMP p. 23; GR p. 13; MBC 97 pp. 1, 3, 4, 5, 15, 16, 22, 27, 32; MGQ BR 97 pp. 56–7, 117; RR 82 tapes 8,18,20)

Gilmore, Mary, stenographer and clerk; daughter of the quarry manager; married stonemason John Kelman; attended 50th anniversary celebrations of Bridge's opening (CG 98 p. 48; MBC 97 pp. 28, 33, 36–7; MQW 95; RTA Photo 35568, cutting cake in 1987)

Glennie, Charles, stonemason, stonedresser (CG 98 p. 47; GR p. 9; MQW 95)

Glennie, Joseph, stonemason; married Mary Ann (CG 98 p. 47; GR p. 9; MQW 95)

Gordon, Bill, stonemason (CG 98 p. 48; MQW 95)

Gordon, George John, stonemason (GR p. 12)

Graham, Harold Frost, storekeeper for the Malabar Cooperative Store established in 1926; from Tilba (CG 98 p. 52; GR p. 9; MBC p. 36)

Grant, William Alexander, stonemason; stonecutter; his daughter, Ruby Webberley, from Aberdeen, wrote her reminiscences, *Granitetown, Moruya*, 1982 (CG 98 p. 47; GR p. 9; MQW 95)

Grant, William Wallace, stonemason; stonecutter (CG 98 p. 47; GR p. 9; MQW 95)

Greig, Allan Waddell, quarryman; recalled his time at the quarry as 'almost like a holiday. I was a farmer before, the quarry had good working conditions'; from Bergalia rode his bike to the quarry at the beginning of the week, stayed in the bachelors' quarters, rode home at the end of the week (CG 98 pp. 31, 44, 48; GR p. 13; MGQ BR 97 p. 104; MQW 95)

Gugielino (Guglienlo), Geramini, stonemason (GR pp.19, 28)

Hall, given name unknown, arrived from Scotland with his wife and two sons (MGQ BR 97 p. 105)

Hall, John Fraser, stonedresser (GR p. 9)

Hall, Joseph Nicol, stonedresser (GR p. 9)

Hardy, Arthur, quarry labourer (GR p. 25)

Hawke, Thomas Anderson (Jnr), axeman (CG 98 p. 49; GR p. 21; MQW 95)

Hawke, Thomas Anderson (Snr), axeman (CG 98 p. 49; GR p. 23; MQW 95)

Hay, Eric William, quarry labourer (CG 98 p. 48; GR p. 13; MQW 95)

Haysom, Harold William, stonemason; married Loris (CG 98 p. 47; GR p. 9; MQW 95)

Henderson, Molly, office staff; subsequently Mrs Cook; replaced Mary Gilmore when Mary married stonemason John Kelman; attended the 50th anniversary celebration of the Bridge's opening; her father owned the Hotel Adelaide, Moruya (CG 98 p. 48; MQW 95)

Honan, Sylvester ('Sylvie'), one of three in the plate-laying gang who constructed the rail system for the travelling steam cranes; general labourer; a Moruya local (CG 98 p. 49; GR p. 26; MBC 97 p. 5; MQW 95)

Honan, T, quarry labourer (CG 98 p. 48; MQW 95)

Hosking, William ('Old Bill'), blacksmith; employed early 1925 in the first blacksmith shop at the quarry; could forge anything 'from a needle to an anchor' (CG 98 p. 49; GR p. 6; MBC 97 pp. 9, 12; MQW 95)

Hosking, J, fitter (MQW 95)

Hughes, Jack ('Honey'), power house attendant; from New Zealand (CG 98 p. 49; MBC 97 p. 20; MQW 95)

Hunt, L. carpenter (CG 98 p. 49; MQW 95)

I-J-K-L

Imer, Vic, driller (DMR 82; WRK26)

Innes, Alexander ('Alec'), quarry labourer (CG 98 p. 48; GR p. 13; MQW 95)

Innes, Annie, part-time sewing teacher at Granite Town Public School, 1927 (MGQ BR 97 p. 119)

Innes, David ('Dave'), quarry labourer; suffered a broken leg (CG 98 p. 48; GR p. 13; MQW 95)

Innes, George, quarry labourer (CG 98 p. 48; MQW 95)

Innes, William ('Billy'), stonemason (dunter), the only stonemason from the district (CG 98 p. 48; GR p. 28; MBC 97 p. 15; MQW 95)

Innes, William, labourer (GR p.13)

Irons, Frank Thomson, blacksmith; married Christina Allan (CG 98 p. 49; GR p. 9; SSX 01)

Jaffrey, William Porter ('Bill'), crane driver; from Scotland; married Mary Valentine; played the fiddle at dances (CG 98 p. 49; GR p. 13; MBC 97 pp. 21, 35; MQW 95)

Jaffrey, John, ranger; watchman(?) (GR p. 9)

Jago, John ('Jack'), stonemason (CG 98 p. 47; DMR 82; SSX 01; WRK26)

Jeffery, (Snr), given name unknown, horse and dray driver (CG 98 p. 48; MQW 95; SSX 01)

Jeffery, George, horse and dray driver (CG 98 p. 48; SSX 01)

Johns, Tony, spawler; from the Balkans; an amateur wrestler (CG 98 p. 48; MBC 97 p. 27; MQW 95)

Johnson, given name unknown, engineer; English; seconded briefly from the Bridge manufacturing shops at Milsons Point; designed the blacksmith shop (MBC 97 pp. 11-12)

Kelman, John, stonemason; with Jock Simpson cut corner stone of Cenotaph; married John Gilmore's daughter Mary; attended 50th anniversary celebrations of Bridge's opening (CG 98 p. 47; MQW 95)

Kelman née Gilmore, Mary, office staff (RTA Photo 35568, cutting cake in 1987)

Kennedy, James George, stonemason; married Mary Ann (CG 98 p. 47; GR p. 6; MQW 95)

Kennedy, Bert ('Daddy'), spawler; (CG 98 p. 48; MBC 97 pp. 26-7; MQW 95)



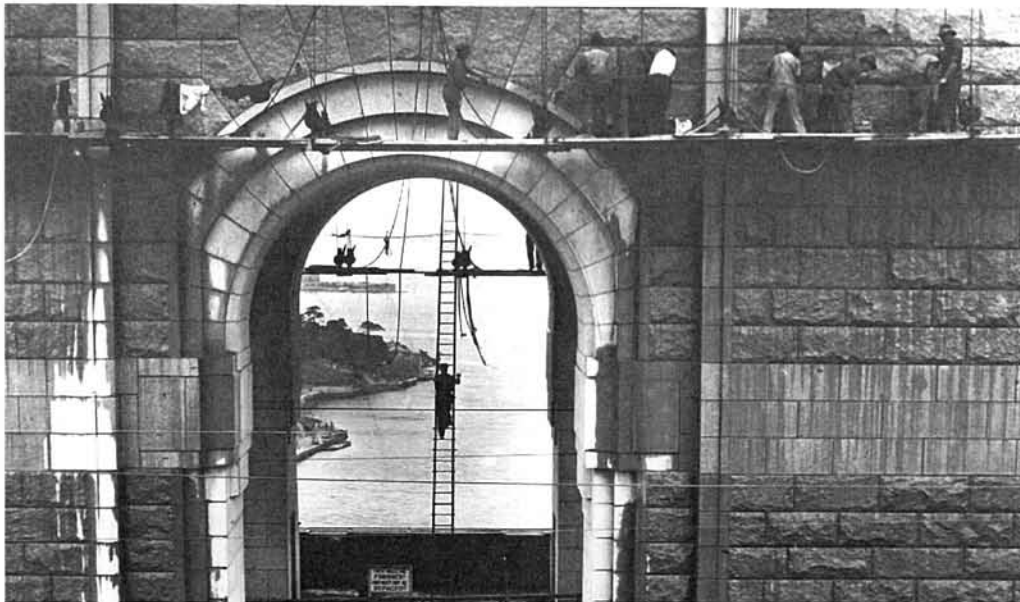
DAY LABOURERS: BILL TARLINGTON, 1926

Sydney's industrial infrastructure was limited and manual labour was the norm.

Bill Tarlington and his mates humped sand and granite aggregate to be mixed into concrete for the Bridge approaches.

The foreman didn't have to shovel.

Photographer: Frank Cash (1887–1964), courtesy Moore Theological College. Source: RR 82 tape 21.



DAY LABOURERS: PAT CRAWLEY, 1932

As the Depression lengthened, more and more people were desperate for jobs.

Pat Crawley was one of the lucky ones. He did three stints on the Bridge.

At one time, he had to get up at 3.30 and walk from Redfern.

Later, he got a job cleaning the granite with muriatic acid and a wire brush:

The work was hard. You were frightened of being put off if you didn't pull your weight so you never even looked up—otherwise you were on the dole. We worked 11 and 12-hour days.

Photographer: Robert Bowden, 3 February 1932. Source: RR 82 Tape 12. Photograph: RTA 37296.

Kennedy, Jim, crane driver on the wharf (RR 82 tape 20; SHBB p. 11)

Kennedy, W, stonemason (apprentice) (MQW 95; RR 82 tape 8; SHBB p. 12; WRK26)

Kimpton, Samuel Jessop, watchman (CG 98 p. 49; GR p. 13; MQW 95)

King, Arthur William, watchman (CG 98 p. 49; GR p. 21; MQW 95)

Knight, Henry Francis ('Harry'), blacksmith; striker for blacksmith Old Bill Hosking; married Elsie May (CG 98 p. 49; GR p. 13; MBC 97 pp. 9, 13; MQW 95)

Kock, Andy (H), labourer; offsider in the engineering department (CG 98 p. 49; GR p. 29; MQW 95)

Lamont, William John ('Bill'), blacksmith; striker for blacksmith Alex Warwick at the small western-end quarry (CG 98 p. 49; MCMP p. 34; GR p. 13; MBC 97 p. 13; SSX 01)

Latta, David Gordon ('Sonny'), quarry labourer; author of *Once Upon a Time*; a keen photographer (CG 98 p. 48; GR p. 10; MQW 95; photo no. 42)

Lawie, John, quarryman (GR p. 10)

Lawrie, Alexander Ross ('Alec'), stonemason; toolsmith; from Aberdeen; in charge of the group of tradesmen who were brought out from Scotland on the *S.S. Barrabool*, 1925 (CG 98 p. 47; GR p. 10; MBC 97 p. 13, 14; SSX 01)

Lawrie, William Ross ('Bill'), stonemason; toolsmith; from Aberdeen; brother of Alex; performed at concerts with Alex Campbell as comic duo 'Flick and Mick' (CG 98 p. 47; GR p. 10; MBC 97 pp. 13, 35; SSX 01)

Leerson, V, fitter (MQW 95)

Lepage, Edgar Albert, stonemason (GR p. 22)

Lepage, Percival Reginald, stonemason; married Winifred Miriam (GR p. 13)

Ley, J, quarryman (MQW 95)

Lizieri, Stanton Adam, office manager; secretary of the Malabar Co-operative; first postmaster; married Mary Turner (BCIb; CG 98 p. 48; GR p. 13; MBC 97 pp. 28, 36-7; MGQ BR 97 pp. 122, 124-5; MQW 95)

Loni, J, quarry labourer (CG 98 p. 48; SSX 01)

Louttit, J, nipper (CG 98 p. 48; MQW 95)

Love, Teddy, stonemasons' union delegate; sent by men to Sydney as de facto delegate to the Operative Stonemasons Society of NSW (RR 82 tape 8; SHBB

pp. 12, 18; WRK26)

Lund, given name unknown, stonemason (CG 98 p. 47; SSX 01)

Luigi, Robbo, quarry labourer (CG 98 p. 48; MQW 95)

Lyden, Edward ('Ted'), attendant in the power house; English; married Nellie (CG 98 p. 49; GR p. 23; MBC 97 p. 20; MQW 95)

M-N

MacKenzie, Kenneth, machine fitter; married Margaret Fletcher (GR pp. 13, 25)

MacPherson, William, stonemason (apprentice) (CG 98 p. 48; MEX; SSX 01)

Manning, Charles Herman ('Charlie'), quarry labourer; operator of the Baxter crusher; brother of Percy; married Alice Maud (CG 98 p. 48; GR p. 13; MBC 97 p. 26; MQW 95)

Manning, Clifford Aloysius ('Cliff'), quarry labourer; operator of the Baxter crusher; married Eva Jane (CG 98 p. 48; GR p. 13; MQW 95)

Manning, Percy Ernest, quarry labourer; operator of the Baxter crusher; Australian Workers Union delegate; brother of Charlie; hospitalised in March 1927 with a severe head injury received at the crusher; quarry workers, who were members of the Australian Workers Union, raised fifteen pounds to help him; married Norah (CG 98 p. 48; MCMP p. 47; GR p. 14; MBC 97 p. 26; MGQ BR 97 pp. 98, 100; MQW 95; SHBB p. 17)

Marchiori, A, stonemason (CG 98 p. 47; MQW 95)

Mark, Theodore, quarryman (GR p. 10)

Marsden, Edwin, labourer (HG 02)

Martin, John, spawler; labourer (CG 98 p. 48; GR p. 10; MQW 95s)

Martin, Lawrence Patrick ('Larrie'), toolsmith; Australian; married a local (CG 98 p. 49; GR p. 14; MBC 97 p. 13; MQW 95)

Martin, Richard, labourer (GR p. 10)

Mastropasqua, Pietro, stonemason (MQW 95)

Matchett, Reuben, crane driver (GR p. 5)

Matthew, Alex, quarry labourer (CG 98 p. 48; SSX 01)

Matthew, Alfred George; stonemason (GR p. 10)

Matthew, William ('Bill'), stonemason; among the group of tradesmen brought out from Scotland on the *S.S. Barrabool*, 1925; soon fired for drunkenness (CG 98 p. 47; GR p. 28; MBC 97 pp. 14–15; MQW 95)

Matthew, William, quarry worker (GR p. 10)

McDonald, Andrew, headmaster at Granite Town Public School, 1927; rode his bike to school each day (CG 98 p. 53; MGQ BR 97 pp. 118, 119)

McDonald, Vince, quarry labourer; a New Zealander (CG 98 p. 48; MQW 95)

McDonald, Robert Morrison, stonedresser; married Isabella McGunigal (GR p. 10)

McEchern, Ivan, assistant teacher, 1930, at Granite Town Public School; an ex-student (MGQ BR 97 p. 119)

McElroy (McIlroy), Mary, assistant teacher, 1927–9, at Granite Town Public School; taught the infants classes; a local; was driven to school each day by her son; forced retirement at 65 years (CG 98 p. 53; MBC 97 p. 35; MGQ BR 97 p. 118)

McIntosh, Alan (Allan) quarry labourer; grindstone (CG 98 p. 48; MQW 95)

McIntosh, Albert John David, powder monkey; labourer (CG 98 p. 48; GR p. 22; MQW 95)

McIntosh, Arthur James Alexander, quarry labourer; powder monkey (CG 98 p. 48; GR p. 22; MQW 95)

McIntosh, Norman Sydney James, stonemason (apprentice); 1910–1966; a local; began at the quarry aged 14 (MQW 95; CG 98 p. 48; GR p. 22; MBC 97 p. 18; HG 02)

McKay (MacKay), Colin ('Col'), stonemason (apprentice) (CG 98 p. 47; MQW 95; GR p. 24; SSX 01; HG 02)

McKay, James William, quarry labourer (CG 98 p. 48; GR p. 22; MQW 95)

McKenzie, given name unknown, foreman toolsharp (RR 00; WRK26)

McKenzie, Brown Clydesdale, foreman tool sharpener, blacksmith; from Scotland; married Mary (BC1b; CG 98 p. 49; GR p. 6; MBC 97 p. 12; MQW 95; RR 82 tape 20)

McKenzie, Kenneth ('Ken'), chief engineer; in charge of plant maintenance; employed on his own terms; from Scotland; former naval engineer; moved to Wingham (CG 98 p. 42 – p. 48; GR p. 6; MQW 95; MBC 97 pp.

10, 23; MQW 95; RR 82 tape 20; HG 02)

McMillan, given name unknown, stonemason (CG 98 p. 47; MQW 95)

McNab, John Carlyle, labourer; married Alexa (GR p. 10)

McPherson, George, stonemason; stonedresser; married Annie (GR p. 10; MQW 95)

McPherson (MacPherson), given name unknown, stonemason apprentice (GR p. 24; MQW 95)

Meldrum, Albert ('Albie'), tool sharpener blacksmith; toolsmith; from Scotland; married Evelyn (CG 98 p. 49; GR p. 10; MBC 97 p. 12; MQW 95)

Melocco, Victor ('Vic'), stonemason; interpreter at Moruya Quarry for the Italian workers; delegate to the Operative Stonemasons Society of NSW; the Melocco family, Sydney stone merchants, used local marble rather than imported (CG 98 p. 47; GR p. 10; MBC 97 p. 16; MQW 95; SHBB p. 18; WRK26)

Middleton, Cosmo Allan, quarry labourer (CG 98 p. 48; GR p. 10; MQW 95)

Middleton, John, crane dogman; labourer (CG 98 p. 49; GR p. 10; MQW 95)

Milne, James Hunter, stonemason; stonecutter; married Marguerite (CG 98 p. 47; GR p. 10; MQW 95)

Mison, Abraham ('Abe' Jnr), offsider in the engineering department; labourer (CG 98 p. 49; GR p. 14; MQW 95)

Mison, David ('Dave'), quarry labourer; married Sarah Matilda (CG 98 p. 48; GR p. 14; MQW 95)

Mitchell, David, in May 1927 married Williamina Gall who came from Scotland for the marriage (MGQ BR 97 p. 103)

Mitchell, Durward ('Derrie'), quarryman (CG 98 pp. 31, 48; GR p. 10; MQW 95)

Moran, John Arthur ('Jack'), plumber; sheet metal worker; employed full-time; made complex, large diameter bends from sheet iron for the installation of forge blowers in the blacksmith shop (CG 98 p. 49; GR p. 7; MBC 97 p. 9;)

Morrison, William, Director of dimension stone; cutting foreman responsible for the marking and numbering of every stone, accurate to 1/8th of an inch, for the Bridge project; office staff; from Aberdeen; lived with his wife, Mary Andrew, and two sons two doors from the Masonic Hall; later moved to New Zealand (CG 98 pp. 43, 48; MCMP p. 37; GR p. 5; MBC 97 pp. 3, 10, 28; MGQ BR 97 p. 78; MQW 95; RR 82 tape 18)

Munn, James ('Jimmy'), crane driver; played the bagpipes (CG 98 p. 49; GR p. 14; MQW 95)

Murphy, Charles, stone cutter; married Ann Milne (GF p. 10)

Murphy, Dennis ('Dan'), machine fitter in the engineering department (GR p. 25; MQW 95)

Murphy, 'Scotch', stonemason (CG 98 p. 47; MQW 95)

Mylott, Patrick Cartlay ('Rick'), nipper (CG 98 p. 48; GR p. 22; MQW 95; HG 02)

Neal, Archibald, stonemason (GR p. 5)

Newlyn, Harold, axeman; from Eden (CG 98 p. 49; GR p. 23; MQW 95)

Nicholls, Charles Clarence, stonemason; married Christina Constance (GR p. 10)

Noonan, Jack, quarry labourer (MQW 95)

Norrie, Stephen, stonemason (CG 98 p. 47; MQW 95)

O-P-Q

Ogg, John, stonemason; stonedresser; from Aberdeen; lived next to the Duncan family; married Mary; died in Aberdeen in 1953 of silicosis (CG 98 p. 47; GR p. 10; SC pp. 1, 21; SSX 01)

Ohlsen, Gus, quarryman (MQW 95)

Oldman, James Jenkins, quarryman driller (GR p. 10)

Overgaard, Harry, stonemason; from Scandinavia; first aid officer; stayed in Australia (CG 98 p. 47; MBC 97 p. 15; MQW 95)

Owins, Thomas Morgan ('Tommy'), stonemason (dunter); Australian, from Sydney; expert at jazz dancing (CG 98 p. 48; GR p. 14; MBC 97 p. 15; MQW 95)

Pascoe, J, office staff (CG 98 p. 48; SSX 01)

Pascoe, John ('Jack'), quarryman; quarry foreman assistant to Archie Davidson; Australian (CG 98 p. 48; GR p. 14; MBC 97 p. 4; MQW 95)

Patrech, Alfred George ('George'), labourer; offsider for the carpenters; worked on the Granite Town cottages; from Batemans Bay (CG 98 p. 49; GR p. 22; MBC 97 p. 8; MGQ BR 97 p. 101; MQW 95)

Patrick, G, quarry labourer (CG 98 p. 48; SSX 01)

Pennie, William Gregor, stonemason; did the keystones (CG 98 p. 47; GR p. 10; MQW 95)

Pike, Charles Joseph, carpenter (CG 98 p. 49; GR p. 14; MQW 95)

Pike, Thomas Augustus Charles (Snr) ('Tom') wheelwright; carpenter; skilled at heavy timber construction; built the gantry for the crusher plant and a much needed crusher pulley with 'consummate skill', 'hardly a skim had to be taken off' Bob Colefax reports (CG 98 pp. 27, 49; GR p. 22; MBC 97 pp. 25-6; MQW 95; MHS Greig, 93, p. 27)

Pike, Thomas Augustus Charles (Jnr) ('Tommy'), nipper (CG 98 p. 48; GR p. 14; MQW 95)

Pilling, Captain Harry, chief officer of one of the three steamers, *Sir Arthur Dorman*, built to take the quarry stone to Sydney; later died at sea (MBC 97 pp. 29, 31; MGQ BR 97 p. 70)

Pittendrigh, Thomas Robert ('Tom'), office staff; stonemason assistant to William Morrison; stonecutter; shed foreman; from Aberdeen; married Bella, Mrs Morrison's sister (BCIb; CG 98 pp. 44, 48, 58; GR p. 6; MBC 97 pp. 4, 10; MQW 95; RR 82 tapes 17, 18; SHBB p. 11)

Pollock, J, quarry labourer (CG 98 p. 48; MQW 95)

Poole, Percy, (killed, aged 30? 39?), quarryman; born in Young; married Agnes; crushed by a large block of granite, 28 March 1927 (CG 98 pp. 48, 74; MCMP p. 48; GR pp. 14, 32; MBC 97 p. 21; MGQ BR 97 pp. 99-100; MQW 95; RR 82 tapes 1, 20; SHBB p. 12)

Porter, J, quarry labourer (CG 98 p. 48; MQW 95)

Pringle, Samuel Cowie ('Sam'), stonemason; from Scotland; lived with his wife, Annie, in the Granite Town cottage that is the only one still standing on site (CG 98 p. 47; GR p. 14; MBC 97 pp. 8-9; MQW 95)

Purdie, James, stonemason (GR p. 19)

Purves, Stanley Stewart Beattie ('Spider'), quarry engineer; office staff; English from an English public school background; tall and thin (CG 98 p. 48; GR p. 7; MBC 97 pp. 4-6, 11-12, 31-2; MQW 95)

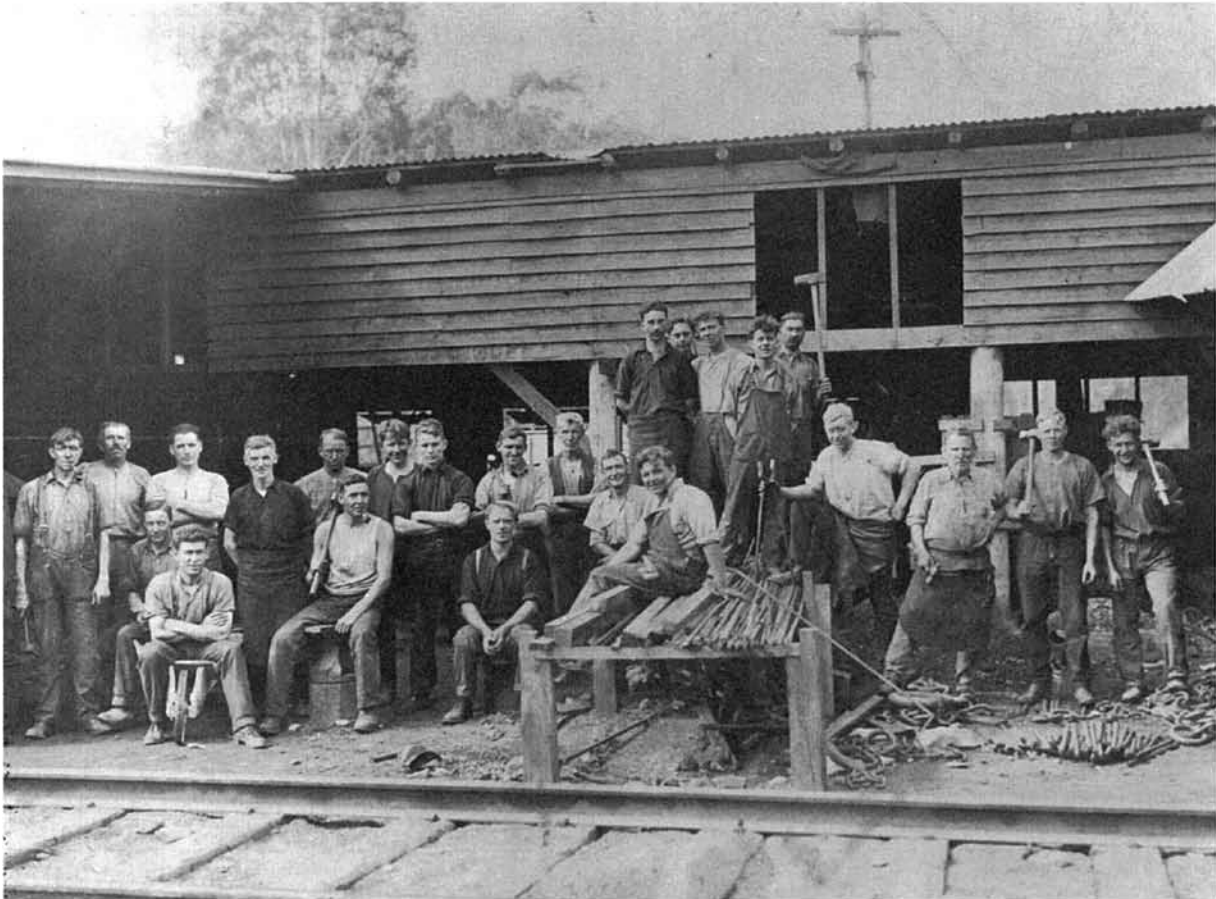
R-S

Roberts, John, quarryman; married Jane (GR p. 14)

Robertson, Francis Robb, carpenter (CG 98 p. 49; GR p. 24; MQW 95)

Robb, Harry, blacksmith; married Jeanie (GR p. 10)

Rodighiero (Rodighero, Rhodigero), Andrea ('Andrew'), stonemason; Italian; married a local and stayed in Moruya; played a mandolin solo at the concert to mark the opening of the Granite Town public hall (CG 98 p. 47; GR p. 23; MBC 97 p. 18; MGQ BR 97 p. 111; MQW 95)



BLACKSMITHS & TOOLSHARPS, 1925

Reg Saunders, an apprentice stonemason, took this photo of a group of Scottish blacksmiths and toolsharps posing with their strikers at the Moruya Granite Quarry.

Those identified are (from left to right) Billy Corrigan, Hector Rose, Reg Crapp, Keith Daley, Tom Pike, Herb ('Snow') Skelton, Bill Hoskins and Harry Knight.

'Old Bill' Hosking, could forge anything 'from a needle to an anchor'.

Photographer: Reginald Saunders. Source: RTA 31315, copied from original, 1979.

- Rodighiero** (Rodighero, Rhodigero), Batista, stonemason; Italian; one of four brothers employed as stonemasons (CG 98 p. 47; MBC 97 p. 18; MQW 95)
- Rodighiero** (Rodighero, Rhodigero), George, stonemason; Italian; one of four brothers employed as stonemasons (CG 98 p. 47; MBC 97 p. 18; MQW 95)
- Rodighiero** (Rodighero, Rhodigero), Placido (Placedo, Placiedo) stonemason; Italian; youngest of four brothers, all stonemasons, who worked at the Moruya quarry (CG 98 p. 47; MBC 97 p. 18; MQW 95)
- Rootsey** (Rootsie), Harold (Harry), stonemason; born in Bega; dance band musician (CG 98 p. 47; RR 82 tapes 8, 9; SHBB pp. 3, 12; SSX 01)
- Rose**, Don, assisted his father, Martin, to paint the cottages (MGQ BR 97 p. 101)
- Rose**, Donald McKellar ('Don'), crane dogman (CG 98 p. 49; GR p. 14; MQW 95; HG 02 'Don and Cliff are the same person')
- Rose**, Douglas Clifford ('Cliff'), driver of Crossley locomotive, son of the then sergeant of police, brother of Hec (CG 98 p. 48; GR p. 14; MBC 97 p. 26; MQW 95; HG 02 'Don and Cliff are the same person')
- Rose**, Hector Harold ('Hec'), blacksmith; blacksmith's striker; son of Police Sergeant Rose; brother of Cliff (CG 98 p. 49; GR p. 14; MBC 97 p. 13; MQW 95)
- Rose**, Martin Ferguson, painted the cottages with help from his son Don (GR p. 7; NN p. 33; MGQ BR 97 p. 101)
- Rose**, Robert ('Bob'), stonemason (apprentice); a local; won a competition for drilling the deepest hole (CG 98 p. 48; GR p. 28; MBC 97 pp. 18–20; MQW 95)
- Ross**, John Smith, quarryman (GR p. 11; MQW 95)
- Rowell**, George ('Sparks'), electrical engineer; office staff; English; completed all the electrical installations at the quarry; married Moruya local Millie Harkus whose father operated the vehicular ferry at Nelligen; lived in White Cottage in River Street (CG 98 p. 48; MBC 97 pp. 6–7, 10; MQW 95)
- Rowell**, Guy Ashcroft, office staff; married Amelia Sarah (GR p. 14)
- Ryan**, F, quarry labourer (CG 98 p. 48; MQW 95)
- Sanguini**, given name unknown, stonemason; Italian; an operatic baritone (CG 98 p. 47; MBC 97 pp. 16, 18; MGQ BR 97 p. 113; MQW 95)
- Saunders**, Reginald ('Reg'), formerly Reg Crapp, born in the Moruya area; stonemason (apprentice); along with others assessed by the town's doctor as fit to be a stonemason; trained under William Gerard; quoted in the Moruya Examiner as saying that a quarry apprenticeship was 'the nearest thing to slavery'. He finished his apprenticeship with monumental masons in Sydney and worked on the Bridge; became a socialist speaker in the Domain. Attended the 1982 Workers' reunion (CG 98 pp. 44, 47; MEX; RR 82 tapes 18, 19, 20; SSX 01; SHBB p. 5; ML Saunders Papers MSS 4041 and Add-on 1755)
- Scroggie**, William Alexander ('Bill'), quarryman driller; among the group of tradesmen brought out from Scotland in the *S.S. Barrabool*, 1925; married a Narooma girl; played the accordion (GR p. 11; MBC 97 pp. 13–15; MQW 95)
- Sebbens**, Oswald Henry ('Ossie'), quarry labourer (CG 98 p. 48; GR p. 26; MQW 95)
- Sergio**, family name unknown, cook in the Italian quarters; played the mandolin (CG 98 pp. 31, 48; MBC 97 p. 16)
- Seymour**, Frank, quarryman (DMR 82; WRK26)
- Shaw**, J, stonemason (MQW 95)
- Shaw**, T, stonemason (MQW 95)
- Sheen**, Albert John Vivian ('Bert') quarry labourer (CG 98 p. 48; GR p. 26; SSX 01)
- Simpson**, Alexander ('Alex'), stonemason; stonecutter; brother of Jock; from Aberdeen; married Mary; went back to Scotland but returned to Australia and worked at Lewisham (CG 98 p. 47; GR p. 11; MQW 95; RR 82 tapes 8, 17, 18; WRK26)
- Simpson**, Bobby, stonemason (RR 82 tapes 8, 18; SHBB p. 11; WRK26)
- Simpson**, given name unknown, stonemason; father of cricketer Bob Simpson (CG 98 p. 44)
- Simpson**, Jim, stonemason? (photograph no. 32)
- Simpson**, John ('Jock'), stonemason; stonecutter; brother of Alex; with John Kelman cut corner stone of Cenotaph; married Lily (CG 98 p. 47; GR pp. 5, 6; MQW 95)
- Simpson**, William Caird, stonemason (CG 98 p. 47; GR p. 23; RR 82 tapes 8, 18; SSX 01; WRK26)
- Sivewright**, Joseph ('Joe' Jnr), crane driver; Scottish-Australian (CG 98 p. 49; GR p. 6; MBC 97 p. 20; MQW 95; WRK26)

Sivewright, Joseph ('Joe' Snr), driver of the 15 ton crane in the quarry (CG 98 p. 49; GR p. 11; MBC 97 p. 21; MQW 95; RR 82 tape 20)

Skelton, Herbert Victor ('Snow'), blacksmith at the first blacksmith shop; a skilled toolmaker, particularly at manufacturing quarry drills; the only one who could operate the Alldays & Onions Air Hammer; from Nellingen; married Moruya local Alex Milne and stayed in Moruya (CG 98 p. 49; GR p. 7; MBC 97 pp. 11, 12; MQW 95)

Slessor, Robert ('Bob'), stonemason; stonecutter; from Scotland; the first stonemason on the job, building a retaining wall of rough granite blocks during preparation of the site; married Helen Rue (CG 98 p. 47; GR p. 14; MBC 97 pp. 15–16; MGQ BR 97 p. 57; MQW 95)

Smith, Arthur Anthony, spawler (CG 98 p. 48; GR p. 14; MQW 95)

Smith, Charles Hector ('Charlie'), quarryman (CG 98 p. 48; GR p. 11; MQW 95)

Smith, Clarence Leslie ('Clarrie'), quarry labourer (briefly) (CG 98 p. 48; GR p. 14; MQW 95)

Smith, given name unknown, horse and dray driver (CG 98 p. 48; MQW 95)

Smith, Gordon, stonemason; stonecutter (CG 98 p. 47; GR p. 27; MQW 95)

Smith, Robert Summers, stonemason (GR p. 11)

Smith, William Edward ('Bill'), the first storekeeper for the quarry works' store; an ex-policeman (CG 98 p. 48; GR p. 28; MBC 97 p. 11; MQW 95)

Smithers, Captain, chief officer of one of the three steamers, *Sir Dudley de Chair*, built at the Government Dockyards in Newcastle to carry the quarry stone to Sydney (MGQ BR 97 p. 70)

Squire, Francis, headmaster, 1927, at Granite Town Public School, 1927 (CG 98 p. 53; MGQ BR 97 p. 119)

Squires, George William, blacksmith (tinsmith); plumber; married Florence Margaret (CG 98 p. 49; GR p. 14; MQW 95)

Stephen (Stephens), Bill, quarryman; among the group of tradesmen brought out from Scotland on the *S.S. Barrabool*, 1925; died of peritonitis at Moruya Hospital a week or two after arriving (MBC 97 p. 15)

Stephen, John Ironside, stonedresser in the years 1926–1931; married Williamina Gibb (BC1b; GR p. 11)

Stephen, W, stonemason (CG 98 p. 47; SSX 01)

Stewart, Robert Jackson ('Bob'), tool sharpener blacksmith; toolsmith; married Helen Findlay; from Scotland (CG 98 p. 49; GR p. 11; MBC 97 p. 12; MQW 95)

Stewart, J, stonemason (MQW 95)

Strahan, Alphonsus Hilary ('Hilary'), quarry labourer (CG 98 p. 48; GR p. 14; MQW 95)

Strahan, Percy Joseph, quarry labourer; plate layer (CG 98 p. 48; GR p. 14; MQW 95)

Strahan, Phonsie, one of three in the plate laying gang who constructed the rail system for the travelling steam cranes; a Moruya local (CG 98 p. 49; MBC 97 p. 5; MQW 95)

Stuart, James Gray Davidson, stonedresser (GR p. 11)

Summers, William, stonemason; married Vera Beatrice (GR p. 19)

T–U–V–W–X–Y–Z

Thomas, William, quarry labourer; married Margaret Barbara (CG 98 p. 48; GR p. 14; MQW 95)

Thomson William, ('Bill'), foreman plate layer; one of three in the plate laying gang who constructed the rail system for the travelling steam cranes; from Scotland (CG 98 p. 49; MBC 97 p. 5; MQW 95)

Thomson, Bill, crane dogman (CG 98 p. 49; SSX 01)

Toms, Albert, member of the Moruya Quarry football team, 1925 (photo no. 44)

Toni, Jim, quarry labourer (MQW 95)

Topp, John, quarryman; quarry labourer; married Elizabeth Main (CG 98 p. 48; GR p. 11; SSX 01)

Turnbull, D, fitter; badly burnt when a blowlamp exploded, 1928 (MCMP p. 49; MGQ BR 97 p. 100; MQW 95)

Turnbull, William Lyell, quarry labourer; assembled crusher bins in early days (CG 98 p. 48; GR p. 26; MQW 95)

Urquhart, George, powder monkey; labourer; in June 1927 married Flora Bisset, a recent arrival from Scotland for whom more than 45 of the Granite Town ladies held a gift afternoon tea (CG 98 p. 48; GR pp. 11, 26; MGQ BR 97 p. 103; MQW 95)

- Vecchia**, Spaga; Italian; worked in the quarry; an expert mandolin player (MGQ BR 97 p. 113)
- Veitch**, Albert Roy ('Roy'), quarry labourer; powder monkey; from Mogo (CG 98 p. 48; GR p. 26; MBC 97 p. 12; MQW 95)
- Veitch**, Austin, quarryman (CG 98 p. 48; MQW 95)
- Veitch**, James Gardiner ('Jim'), quarry labourer (CG 98 p. 48; GR p. 14; MQW 95)
- Veitch**, Richard Albert ('Dick'), powder monkey; labourer; married Margaret Elizabeth (GR pp. 5, 26; MQW 95)
- Verrant**, George, ('Curley'), in the engineering department (MQW 95; HG 02 'Curley and George are the same person')
- Verrent**, George Thomas, quarry labourer; seaman; married Florence May (CG 98 p. 48; GR p. 11; SSX 01; HG 02 'Curley and George are the same person')
- Walker**, Lancelot Henry, blacksmith (GR p. 14)
- Walker**, Lionel Alfred, stonemason; blacksmith; married Elizabeth Jane (CG 98 p. 48; GR p. 14; MQW 95)
- Wallace**, Joseph ('Joe'), stonemason; stonedresser; with Bill Benzie cut inscription on Cenotaph stone; married Annie Barbara (CG 98 pp. 47, 58; GR p. 11; MQW 95; photo no. 21)
- Wallace**, Willie, stonemason (apprentice) (CG 98 p. 48; MQW 95)
- Walton**, George Merchant, stonemason; stonecutter; lost a finger; had a walrus moustache; played the accordion at dances (CG 98 p. 47; GR p. 7; MBC 97 p. 35; MQW 95; RR 82 tape 20; SHBB p. 11)
- Warner**, Thomas Herbert ('Bert'), machine fitter; in the engineering department; married Hannah Christiana (CG 98 p. 49; GR pp. 15, 25; MQW 95)
- Warwick**, Alexander ('Alex'), the single blacksmith at the small western-end smithy; Australian; married Moggett (CG 98 p. 49; MCMP p. 34; GR p. 11; MBC 97 p. 13; SSX 01)
- Waters**, Harry (1876–1926), crane dogman; born in Moruya; fatally injured at Moruya quarry while riding the carriage of a crane when the big counterweight jib severed his leg between knee and hip. He died the next day, 7 April 1926, aged 50 (CG 98 pp. 49, 74; MBC 97 p. 21; MGQ BR 97 p. 99; MQW 95; RR 82 tape 1)
- Watson**, Jock, tool sharpener blacksmith; from Scotland (CG 98 p. 49; MBC 97 p. 12; MQW 95)
- Watson**, William Clark, toolsmith; married Esther Forbes (GR p. 11)
- Watt**, Charles Andrew ('Charlie'), tool sharpener blacksmith; toolsmith; from Scotland; married Mary (CG 98 p. 49; GR p. 11; MBC 97 p. 12; MQW 95)
- Watt**, George Leslie, quarryman; born in Aberdeenshire; married Eunice Crapp who had come from Moruya (CG 98 p. 48; GR p. 11; MBC 97 p. 15; MQW 95; photo no. 44; RR 82 tape 20)
- Watts**, Vernon Ashley, stonemason (CG 98 p. 47; GR p. 14; MQW 95)
- Webster**, Finlay, quarry labourer (CG 98 p. 48; SSX 01)
- Weir**, Roy, stonemason (CG 98 p. 47; MQW 95)
- Wheeler**, Joe, crane driver on wharf (WRK26)
- Whittaker**, Ernest, stonemason (GR p. 19)
- Williams**, Cecil Thomas, quarryman (CG 98 p. 48; GR p. 15)
- Williams**, Wanky, quarryman (MQW 95)
- Willing**, Gerard, instructor at Moruya (E&R; RR 82 tape 18)
- Woodey**, Arthur William, stonemason; delegate to Operative Stonemasons Society of NSW; married Rosamond Augustine (CG 98 p. 48; GR p. 11; MQW 95; SHBB p. 18)
- Worland**, Walter Francis, charcoal contractor (CG 98 p. 49; GR p. 15; MQW 95)
- Zakas**, Arthur, Stonemason, 1928 - 1931, Greek-Macedonian
- Zealo(?) Zelot(?)**, given name unknown, stonemason; born in Italy (RR 82 tape 20)





TESTING CONCRETE SAMPLES

Professor Warren tested steel and Assistant Professor Eastaugh undertook chemical analysis of steel and concrete at Sydney University's Peter Nichol Russell School of Engineering.

Photographer: Robert Bowden. Source: Dr Bradfield Collection, State Records NSW.

CONCRETE: *Man's artificial stone ...*

KANDOS WORKERS 1924–1932

Kandos is a company town founded in 1915 on the Sydney to Mudgee railway line. It owes its start to wartime demand for its plentiful supplies of limestone, shale and high-grade coal. Several years later its cement company was in trouble and NSW Cement Lime and Coal Co became Kandos Cement Ltd.

The contract to supply the North Shore Bridge with concrete signed in 1924 ensured Kandos's survival. In 1925 the first draft Australian Standard Specification for Portland Cement was published and adopted a year later as Australian Standard A.2. On 5 January 1925 excavations began for the Bridge's main bearings. The concrete had to be especially good.

Harold Schroder, works superintendent, dramatically increased infrastructure. Its kilns, the main feature of dry cement works, increased from 2 to 5 kilns in just over a year. Schroder also bought railway locomotives and trucks, an American-made Traylor crusher (the largest in Australia), pulverising mill, aerial ropeways, rotary driers, combination mills, Krupp combination mill for pulverising coal and the powerhouse and generating turbines. Peak production was 149,000 tons of cement in 1928.

The mining and construction industry was unstable with many closures and re-openings, decrepit and frontier working conditions. In 1929 Geelong-based Australian Cement Ltd (wet process) and Kandos (dry process) merged to create Australian Portland Cement. The plant was often idle during the Depression years and workers turned to gold prospecting and the swag.

Bridge history is conserved at the Kandos Bicentennial Industrial Museum and Historical Society housed in a concrete National Estate listed Church, built in 1919 by mine manager Floyd S Richards, to his iconoclastic American design.

A–Z

Anderson, WJ, furnace captain then pay clerk; with EM Schroder at Great Cobar Copper Mining Co Ltd's smelting works at Lithgow c. 1901–09, then at CSA Mines Ltd Kandos refinery c. 1919; pay clerk at cement works; in Depression acted as shunter and weighman (KS 31; EMS 89)

Cashman, Miss, tracer

Davis, Pat, smelter foreman; worked with EM Schroder at the Great Cobar Copper Mining Co smelting works at Lithgow c. 1901–09, then at CSA Mines refinery at Kandos c. 1919 (EMS 89)

Fink, C, secretary; chief clerk in office; in the Depression duties extended to running the tractor for shunting trucks (KS 31)

Fisher, Charlie, 'engineer' come fitter and turner; worked with EM Schroder at the Great Cobar Copper Mining Co's smelting works at Lithgow c. 1901–09, then at CSA Mines refinery at Kandos c. 1919 (EMS 89)

Ford, Joseph Francis, blacksmith at the quarry in the years 1922–1932 (BC1b)

Gallagher, Miss, office machine operator (KS 31)

Glass, A, draftsman; also worked as yard labourer in Depression (KS 31)

Hall, EK, quarry manager overseeing all excavation and hauling from 1923–1945, Kandos Collieries Limited; Hall gained his experience at the Bodangora gold mine; in 1924/25 was advanced a 1000 pound loan to build a house (KC 70s; KH 84)

Hayward, R, junior clerk and boy in fitting shop (KS 31)

Hiscox, HW, chemist; helped with repairs and greasing in Depression (KS 31)

Jarvis, Charles, bookkeeper, worked with EM Schroder at E&A smelter at Waratah, Newcastle c. 1908–1917, then at CSA Mines refinery at Kandos c. 1919; when copper prices fell dramatically in the mid-20s CSA dismissed all Kandos men except for Jarvis and EM Schroder (EMS 89)



CONCRETERS: FRANK VILLAGARD, 1932

Frank Villagard, a trained carpenter, was pleased to get a concreter's job. He worked on the northern approach, the concrete roads and the parapet walls. *We called ourselves the CCC because we worked calmly, carefully, correctly.*

Villagard worked four days a week and got £4 for it.

This kept two families going—his own and his unemployed brother-in-law's.

The concreting squads did most of their work by hand. The concreters would lay the formwork and the labourers would hump the sand and metal up to the concrete mixers, wheel the mixers into position and pour the concrete.

This squad is pouring the last bucket of cement on 25 January 1932.

Sources: RR 82; RTA 37297 (PWD).

Jones, CH (Charles), chemist; assistant chemist at Goodlett and Smith's works Paramatta; chemist (KS 31; EMS 89)

Kirkness, CMF, electrical engineer 1925–1948; held a mining electrician's ticket necessary for the mine's operation (KC 70s)

Kneeshaw, FP ('Jimmy'), electrical engineer; worked at Noyes Bros then Kandos as chief electrical engineer; replaced Frank Oakden as general manager of Kandos Cement in 1921; clashed with Floyd S Richards' works superintendent in late 1922 and employed EM Schroder to take place. General manager based in Sydney 1922–53; company director 1928–52. Awarded an OBE and MLC (EMS 89)

Lofthouse, TA, electrical engineer until end 1925 (KC 70s)

McTaggart, MI (Ian), metallurgist, a works chemist; appointed mill manager then chief chemist in 1931 (including production management); married Harold Schroder's daughter Dorothy and succeeded him as works manager, working for 45 years. His diary (unlocated) gives an account of the North Shore Bridge contract and its impact; a keen tennis player (KS 31; KC 70s; KH 84; EMS 89)

Newman, T, stores clerk (KS 31)

Plenty, W, storeman; also worked in bagging crew (KS 31)

Rail, WM, chemist c. early 1920s; 'quick tempered and red-headed' (EMS 89)

Richards, Floyd S Richards, works superintendent NSW Cement Lime and Coal Co (which in 1920 became Kandos Cement); clashed with works manager FP Kneeshaw and returned to America in late 1922; replaced by EM Schroder. The concrete Methodist Church in Dunn St, Kandos is based on the design of his American home church (Kandos Museum; EMS 89)

Robertson, NC, draftsman (KS 31)

Russell, John, engineer 1924–26 (KC 70s)

Sewell, Len, assistant chemist, c. 1920 (EMS 89)

Schroder, Harold, (WH, 'Mr Schroder Senior') (1875–1964), metallurgist; chief chemist then works superintendent at Kandos from 1922 to 1945. Studied chemistry and assaying at Adelaide University; in 1901 began working in the copper industry as assayer for the Great Cobar Copper Mining Co's smelting works at Lithgow, NSW; worked in the copper industry at Newcastle then near Bathurst before moving to cement. Charged with erecting and managing a smelter and electrolytic refinery at Kandos to make brass from cartridge cases. With the end of the war copper demand plunged. Kneeshaw engaged him as chief chemist in 1922 and at the year's end he replaced Floyd Richards as works superintendent. He was, to a large extent, 'King of Kandos'. Keenly interested in photography and had a half-plate camera and a 4x5" Premo camera and documented the town and its works. (KC 70s; KH 84; EMS 89)

Schroder, EM ('Bob') (1901–), engineer, born Lithgow; worked in the testing laboratory of the new Newcastle steelworks in 1917; moved with family to "primitive ... but exciting" Kandos in 1918, changing to the cement industry; sent abroad to America then Europe in 1924 and 1926–27, returning as chief chemist before leaving for Geelong in 1929. His memoirs, *I remember, I remember*, were published in 1989. (KS 31; KC 70s; KH 84; EMS 89)

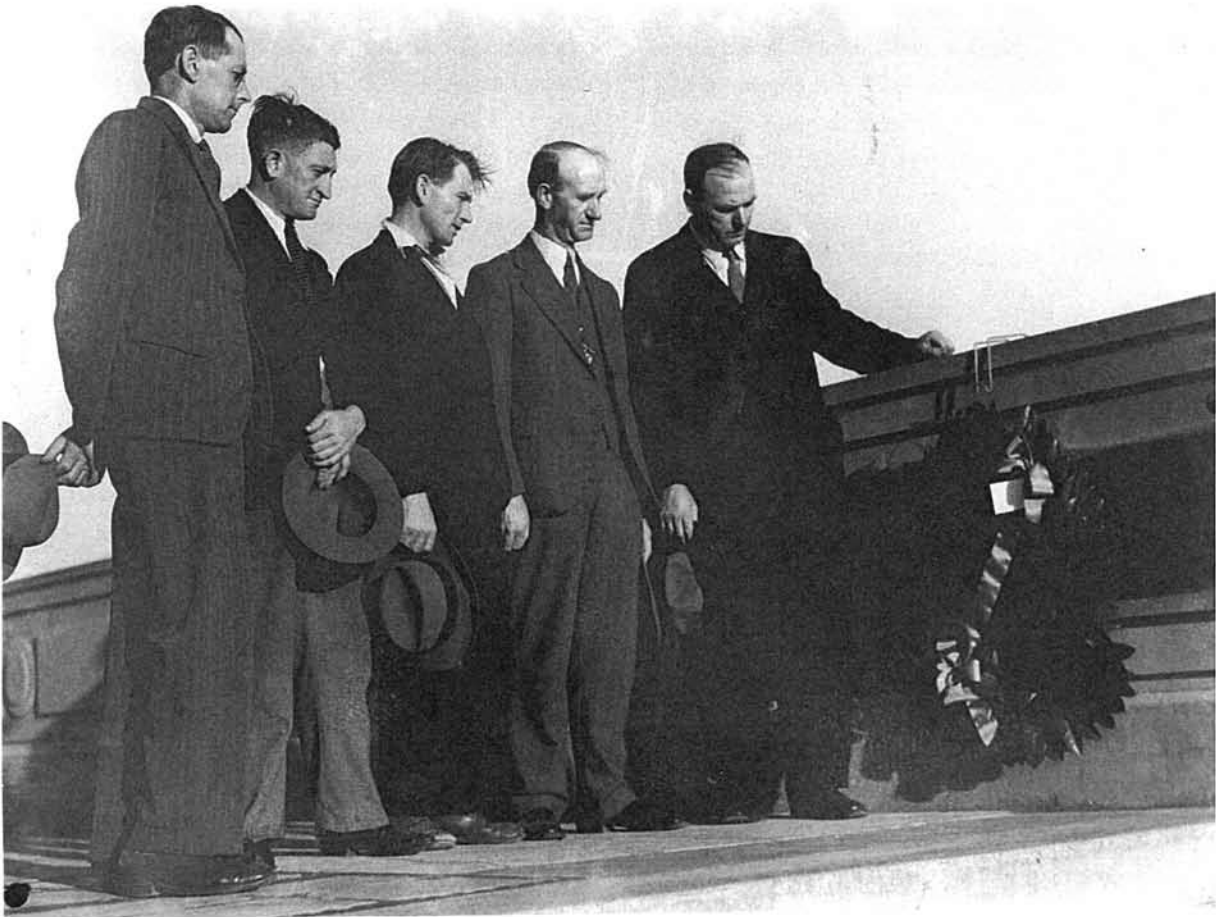
Stephinson, WH ('Bill'), chief engineer; unsuccessful suitor for Harold Schroder's daughter Dorothy (KS 31; KI 01)

Teasdale, JW, managed coal mining from 1923–1928; coal was won by pick and shovel on a contract basis, each man having to meet a daily quota; skips were hauled to the surface by horses. Teasdale left after a motorbike accident killed the town's dentist (KC 70s; KH 84)

Turner, AE succeeded Harold Schroder as chief chemist in 1923; former manager of Newcastle Slag Cement (KC 70s; KH 84)

Turner, MR, surveyor (KS 31)





LEST WE FORGET

The State Government erected this plaque at the top of Bridge Stairs, The Rocks.
Bradfield wanted to install a series of bronze plaques in each of the Pylon forecourts to commemorate
the Bridge's construction and the men who died as well as Cook's arrival, the colonies'
Federation and the Great War. These grand and costly tributes were never built.

Source: RTA 1330. Photographer: DMR, January 1935.

LEST WE FORGET

THE ACHIEVEMENT OF CONSTRUCTION WAS MARRED BY THE DEATHS OF 16 MEN IN BRIDGE-RELATED WORKPLACES.

THEY WERE:

Addison, Sydney John (1905–1930), boilermaker's assistant who fell from the arch when he was bolting up a piece of steel.

Campbell, James (1887–1932), foreman rigger, knocked by a derrick crane as he was dismantling scaffolding from the NW Pylon on 6 February 1932. A gust of wind had caught the crane.

Chilvers, James Francis (1877–1931), dogman, was working at the Milsons Point Workshops when a piece of wood knocked him into the water.

Craig, Robert (1863–1926) was a braceman who fell down a ballast heap at Milsons Point.

Edmunds, Alfred (1875–1931) was a Canadian-born labourer who was packing stones when he crushed his thumb. He died from tetanus poisoning 11 days later.

Faulkner, John Alexander ('Felix'), (1891–1931) was born in Montreal, Canada and the second of the two riggers to die on the job. He was laughing when a huge sliding steel plate almost severed his legs.

Gillon, Frederick (1905–1930) was a rigger who died instantly when a sheerlegs collapsed in Junction Street, North Sydney.

Graham, Robert (1890–1931) was working as a day labourer when a tram knocked him down in Alfred Street, North Sydney.

McKeown, Thomas (1881–1929), an Irish-born rigger who fell from a painting gantry which was suspended from the Bridge's road deck.

Peterson, Engel August ('Angel'), (1904–1927), a Swedish born rigger who broke his spine in the Dorman Long workshop and died six months later at the Coast Hospital (aka Pedersen).

Poole, Percy (1897–1927), a quarryman from Moruya, was working in the quarry when a large stone block slid back and killed him instantly.

Shirley, Edward (unknown–1928), married, was working as a carpenter when some scaffolding collapsed on him at the Fitzroy Street Arch, Milsons Point. He died four days later in Royal North Shore Hospital.

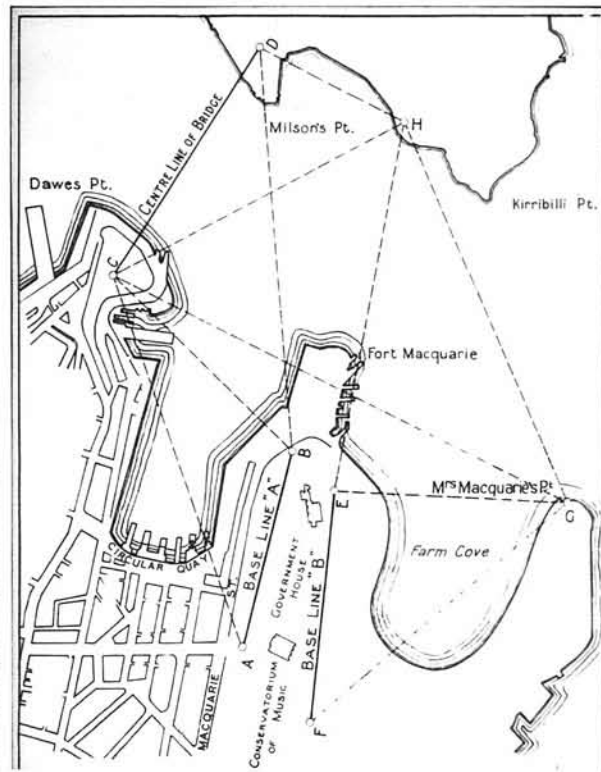
Swandells, Nathaniel (1905–1927), ironworker's assistant, was working in a riveting gang when he fell from an approach pier and died instantly (aka Swondels).

Waters, Henry (1876–1926), dogman and Moruya identity, was riding on a loco-crane at the quarry when the big counterweight jib severed his thigh. He died the next day.

Webb, John Henry (1908–1931) was an English-born painter who fell from a cross-girder when he was working inside one of the south pylons.

Woods, William (1886–1928), a Scottish-born ironworker who fell more than twenty metres from a gantry on the ninth span.





SURVEYORS: AMPHLETT'S BRIDGE TRIANGULATION SURVEY, 1925

EA 'Slippery' Amphlett is documented at Mrs Macquarie's Point using an 8-inch Watts theodolite specially made in England for the Bridge triangulation survey. This theodolite correctly read angles to one second. The surveyors had to locate the southern pair of main bearings exactly 1650 feet from the Milsons Point pair. And, since it was not possible to measure the distance directly over water, they established base lines in the Botanic Gardens and in the grounds of Government House.

This was probably the most important measurement in the construction of the Bridge.

The base lines remain today.

Photograph (LHS): RTA 36600, 17 March 1925; plan (RHS) Dr Bradfield collection, State Records NSW.

Source: PWD *Annual Report* 1926.

ABBREVIATIONS & INDEX TO REFERENCES

ADB: Australian Dictionary of Biography

ABC 82: Bridge of our Dreams, ABC TV documentary on Sydney Harbour Bridge through its construction, up to the opening for 50th anniversary; interviews with riggers, riveters, office workers and engineers.

BCIb: BridgeClimb name collection

BEng (and BE): Bachelor of Engineering.

Bradfield Thesis: 'The City and Suburban Electric Railways and the Sydney Harbour Bridge', *Thesis* for the Degree of Doctor of Science in Engineering, Sydney University, January 1924. Rare Book and Special Collections Library, Sydney University.

CG 98: C. Greig, *Not Forgotten, Memorials in Granite*, published by Mrs Helen ('Nell') Greig for Moruya Historical Society, 1998 (first published 1993).

DL 32: *Sydney Harbour Bridge*, commemorative publication, Dorman Long & Company, London, 1932.

DM: *Daily Mirror*, Sydney, 1932 (newspaper).

DT82: *Daily Telegraph*, 1982.

E&R: David Ellyard & Richard Raxworthy, *The Proud Arch: The Story of the Sydney Harbour Bridge*, 1982, Bay Books, Sydney.

FC 30: Frank Cash, *Parables of the Bridge*, 1930.

FC 62: Frank Cash, *Sixteen Turning Points in the Construction of Sydney Harbour Bridge*, 1930.

GR: Geoff Reynolds, *Granite Town, 1928. Moruya NSW 2537*, Possum Printing, 1993. Held ML SLNSW.

HG 02: Mrs Helen ('Nell') Greig, corrections to draft made by letter per William Althmann, Moruya District Historical Society to authors 17 Jan 2002.

EMS 89: EM Schroder, *I remember, I remember*, 1989.

GOH 94: 'Geelong Voices: Oral History Project', 8 February 1994. Interviews with Max Parker, Graeme Palmer, George Herbert, Agnes Herbert.

JA: John Andrew, folder of materials and correspondence on workers, Department of Main Roads, 1982; BridgeClimb, 2000.

KI 01: interviews by Jo Holder with Geelong Cement Museum Curatorium: Max Parker, mechanical engineer and manager of Geelong works; Graham Palmer, industrial chemist, works chemist Geelong; Cornelius Palmer, industrial plumber, Geelong Cement works.

KC 70s: Bruce Fleming and Pat Frappell, *History of Australian Portland Cement Ltd and Kandos Collieries PL at Kandos*, Kandos Historical Society, c. 1970s

(photocopy ms).

KH BF 84: Bruce Fleming, *History of Kandos*, Kandos Historical Society, 1984.

KML: Miles Lewis, *200 Years of Concrete in Australia*, Concrete Industry of Australia, 1988.

KS 31: Schedule from Kandos to WB McCann, Geelong showing duties of senior Kandos staff in relation to works closure, 5 May 1931. Geelong Historical Records.

LD: *Labor Daily*, NSW Labor Council, (newspaper).

MEng: Masters of Engineering.

MBC 97: AV ('Bob') Colefax, *Moruya's Golden Years*, Moruya & District Historical Society Inc., 1997.

MEX: Reginald Saunders, *Moruya Examiner*, April 1982.

MCMP: *Moruya Quarry Conservation Management Plan*, Report No. 98/16, second draft, published by Department of Public Works & Services for the Department of Land & Water Conservation, June 2000. Based on MGQ 97.

MGQ 97: Brian Rogers, *A History of the Moruya Granite Quarry*, Department of Lands and Water Conservation, Wollongong 1997. Part 1, Text & Figures; Part 2, Photographs; followed by Moruya CMP, 2000.

MHS: Moruya Historical Society, conversations with authors 2000.

MHSP: Moruya Historical Society: photograph collection.

ML: Mitchell Library, State Library of New South Wales (SLNSW).

MLOH: Mitchell Library Oral History Collection.

MoS07: Museum of Sydney, *Bridging Sydney* exhibition, 2007, visitors' book.

MQW 95: 'Moruya Quarry Workers Dorman Long Employees 1924-1932', compiled by AV ('Bob') Colefax, Mrs Helen (Nell) Greig (nee Gilmore), Mrs Mary Kelman (nee Gilmore) and Allan Greig, c. 1995. Held Moruya Historical Society.

MR: Main Roads, Journal of the Department of Main Roads.

MR7.1: Main Roads newsletter, volume 7 number 1.

MRBSC: Main Roads Board service card, State Records NSW.



LAYING THE LAST STONE, 1932

On the day of James Campbell's funeral, Jock Mackay, foreman stonemason, laid the last block of granite in the presence of Bradfield, Ennis, Roger Butler and James Muir.

A week earlier Campbell, the foreman rigger, had fallen from this spot on the NW Pylon and the ceremony honoured his memory.

Photographer: Robert Bowden, 15 January 1932. Source: RTA 34034.

MRCB: NSW Railways: Metropolitan Railway Construction Branch, Technical Staff. From 1916, the NSW Railways Metropolitan Railway Construction Branch assigned 50 engineers and draftsmen to the rail electrification project. After the Bridge Enabling Act in 1922, many were transferred to the PWD.

NMcA 00: Norm McAlpine, interview with authors 2000.

NN: Nigel Neilson, 'Granite Town, Moruya River', *Thesis*: for Graduate Diploma in Local and Applied History, Armidale College of Advanced Education, 1988.

PCC: Paul Cave Collection.

PSL: NSW Public Service Lists, Mitchell Library, plus year.

PWD: Public Works Department, New South Wales.

PWDAR: Public Works Department *Annual Reports*. Year ending June 1927: total number of workers on Bridge and approaches 1,250 comprising at Moruya 250, DL on Bridge and in workshops 700, PWD on approaches 300. Year ending June 1928: total number of workers 1,440 comprising at Moruya 240, DL on Bridge and in workshops 700, PWD on approaches 500. Year ending June 1930: total number of workers 1,654 comprising those in civil engineering and at Moruya 219; DL workshops 761 (a late night shift was added with c. 40 workers; three shifts); DL erection of steelwork and painters 284; PWD on approaches 390.

RFO: Ralph Freeman Office, London. Consulting engineers to Dorman Long.

RR 82: Richard Raxworthy, *Sydney Harbour Bridge Builders*, audio cassettes 1982, Mitchell Library Oral History Collection, State Library of NSW. Also held National Library of Australia.

RR 89: Richard Raxworthy, *The Unreasonable Man: The Life and Works of J.J.C. Bradfield*, 1989, Public Works History Series, Hale & Iremonger, Sydney. Republished by BridgeClimb in 1999.

RR 2000: interview with authors 14 December 2000, audiotape MLOH.

RTA 89: *The Story of the Sydney Harbour Bridge*, Roads and Traffic Authority, February 1989 (reprint The authoritative source for construction facts).

SC: Sally Cains, *Connected to the Bridge: Albert Ogg's Biography*, self-published, 1995. Held Moruya Historical Society.

SHB: Sydney Harbour Bridge.

SHB SD: Terri McCormack *Sydney Harbour Bridge Source Analysis Document*, 2000.

SHBCMP: Sydney Harbour Bridge Conservation Management Plan, 1998, RTA.

SHB&A: Roads and Traffic Authority Archives, diagrammatic listing of principal staff; document headed 'Sydney Harbour Bridge and Approaches'.

SHBDL: List of Attendees, Banquet to Celebrate the Opening of SHB Government Officers and Supervising Staffs, 16 March 1932, Imperial Service Club.

SLOH: Stanton Library, Oral History Interviews, Local History Collection, c. 1996.

SLOHMP: Stanton Library Oral History; also cited in Margaret Park, *Building a Bridge for Sydney: The North Sydney Connection*, 2000, North Sydney Council.

SSX 01: 'Quarry workers to be remembered in the Park', *Southern Star Extra*, (Moruya) May 9, 2001 (republication of MQW 95 with some variation).

Thesis (unpublished): Rees Mackay, 'Robert Charles Given Coulter 1864-1956', BArch *Thesis*, UNSW, 1979; Neil Baxter, 'Thomas S. Tait and the Glasgow Empire Exhibition', MA *Thesis*, University of Glasgow.

WRK26: 'Moruya Granite: Workers At Moruya Granite Quarry Circa 1926', 2001. List published for Moruya 2000 Committee by Col Cheshire. Problematic as includes many Bridge workers names.



NOTE ON REFERENCES

Using different sources sometimes results in entries that do not have inner harmony. Occupational conflict may be noted in some references, for example: 'Aitken Robert, quarryman apprentice, engineer'; Carr, ...blacksmith, labourer'; 'Walker, Lionel, stonemason, blacksmith'. However, until the alternatives are proven, we have included all employment categories. Until otherwise verified, all workers are first listed as working in Sydney under 'steel'.



BRADFIELD MUSEUM, 1932–1981

The Bradfield Museum documented the construction and hung portraits of the Bridge's senior civil engineers.

From left to right: Lawrence Ennis, Dorman Long's director of construction;
Ralph Freeman, consultant to contractors; Frank Litchfield, supervising engineer, PWD;
James Gracie, inspector of erection, PWD; Joseph Phelps, senior inspector, PWD.

Photograph: Nino Marshall, 1981. Source: RTA 22524.

FUTURE GENERATIONS WILL JUDGE OUR GENERATION BY OUR WORKS ...

JJC Bradfield, chief engineer, 1924

When the project was approved in 1922, a Bridge seal showing a cantilever bridge over the Bridge motto *Labore et Honore* was designed. As soon as Bradfield chose Dorman Long's bid, RCG Coulter reworked the seal to show a double-hinged arch bridge.

JJC Bradfield realised the dream of crossing the glittering harbour when he steered the Sydney Harbour Bridge to its completion on 19 March 1932. He decided to dignify the great bridge with granite pylons. Bradfield, quoting the poet John Keats, wanted them to be "in keeping with the graceful outline of the arch, which conforms to the principles of truth, for 'beauty is truth and truth is beauty'". (Bradfield, *Report on Tenders*, 1924.)

The Pylon Lookout tells the story of his and the workers' achievement. It also incorporates the remains of the Bradfield Museum.



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BRADFIELD MUSEUM & PYLON LOOKOUT

Engineering encompasses ... The utility of material things With the beauty of spiritual things

Source: JJC Bradfield, 'Introduction', *Thesis*, January 1924.

The Bridge engineers created the Bradfield Museum to celebrate their achievement. It was in the South West Pylon and open on weekends for about fifty years (from 1932 to 1981). The engineering museum featured Robert Bowden's photographs of the construction and a portrait gallery of the principal engineers who worked on the Bridge between the 1920s and 1960s.

The Bradfield Museum displayed models, of which the most important was the centre pin 1:2 scale wooden model, key equipment and plans as well as samples from tests that determined the tension, compression, bending and shear stresses. Typed captions, now lost, explained each image and object. The artefacts represent benchmarks in the Bridge's stress analysis, engineering mathematics and construction as established in Bradfield's *Bridge Tender Specifications*, 1922 and subsequent *Thesis*.

It also housed a reference archive of an estimated 5,000 original plans, blueprints, illustrations and sketches. The large blueprint on the wall assisted the work of the Bridge Supervisor. The Department of Main Roads microfilmed these records in the 1980s and transferred some of them to State Records NSW.

In 1981 some objects were transferred to the South East Pylon (Pylon Lookout) and included in three successive exhibitions: *50th Anniversary Exhibition* (Phil Verner and John Andrew, 1982–1987), *Old & New: A Bicentennial Exhibition* (Neville Williams, 1987–2000), *Proud Arch and Parapet Panorama* (Jo Holder, Gavin Harris and Kathy Grant, 2000–2002) and the current *Pylon Lookout Exhibition* (Hewitt Pender Associates 2003).

New South Wales Roads and Maritime Services, which is responsible for the Bridge's maintenance, commissioned the Sydney Harbour Bridge Conservation Management Plan (1998) to ensure that the Bridge's heritage is conserved for National Estate in perpetuity.

The Honour Roll project was launched by the Pylon Lookout in 2000 and continues. It was inspired by Richard Raxworthy's (1932–2003) Bridge project which he described as "a story of working men's culture and working conditions that spans two decades." Beginning in 1982, the Bridge's 50th Anniversary, he began the first of 44 interviews and research for two key publications. The 75th anniversary is another opportunity to research and document these men's monumental achievement.



