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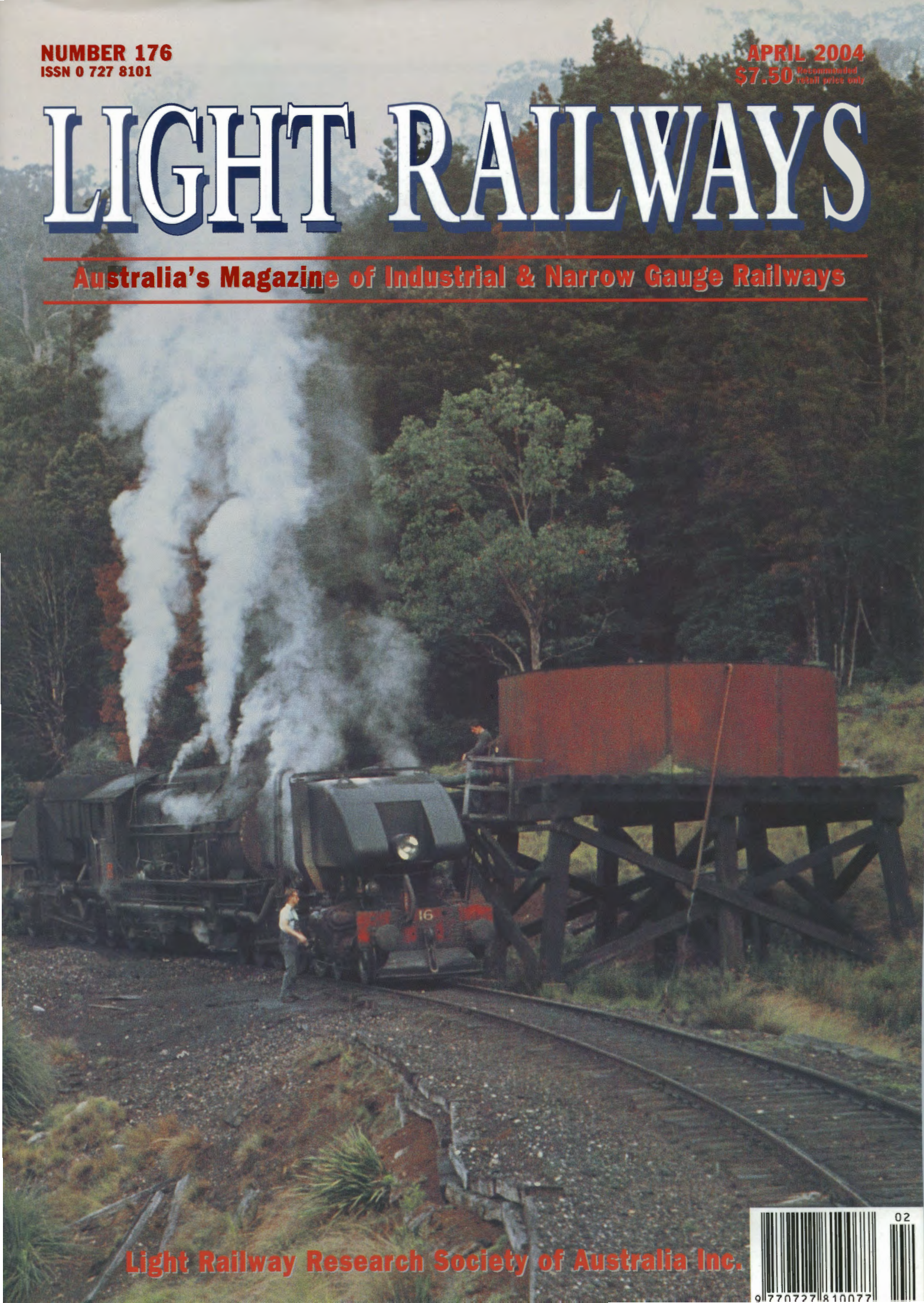
LIGHT RAILWAYS

Australia's Magazine of Industrial & Narrow Gauge Railways



Light Railway Research Society of Australia Inc.

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Australia's Magazine of Industrial and Narrow Gauge Railways

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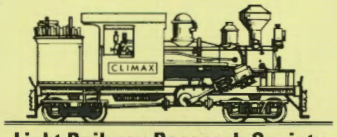

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Conversions:

1 inch (in)	25.40 millimetres
1 foot (ft)	0.30 metre
1 yard (yd)	0.91 metre
1 chain	20.11 metres
1 mile	1.60 kilometres
1 super foot	0.00236 cubic metre
1 ton	1.01 tonnes
1 pound (lb)	0.454 kilogram
1 acre	0.4 hectare
1 horsepower (hp)	746 Watts
1 gallon	4.536 litres
1 cubic yard	0.765 cubic metres

Contents

Comment

Well, time has caught up with me once again. It's the middle of March (11pm on the evening of the 17th to be precise), the presses at Courtney Colour are ready to roll and here I am still writing my Editorial!

Still, it's been an interesting couple of days in railway terms with events that, had I submitted this on time, I could not have included.

Firstly, I received an invitation from the NSW Rail Transport Museum, of which I'm long-time member, to book a seat on one of the first passenger runs of newly restored 4-6-0 3526, this coming weekend. (OK, so it's not 'light railways', but it is a major event for NSW steam enthusiasts, and I'm personally delighted to see the 'Nanny' back in action.)

Secondly, I'm pleased to report that the Puffing Billy Railway's Beyer Garratt locomotive G 42 ran yesterday from Belgrave to Emerald (to be turned on the turntable there) and back - its first mainline run in steam since 1962. Not having been


PHOTO: BILL HANKS

privy to the process of restoration, I'm surprised and delighted to see G 42 fitted with a 'real' G-class chimney, not the hideous 'VR bucket' it carried during its final years of service and into preservation. A full report will appear in our next issue.

For a railway enthusiast today it's easy to feel pessimistic sometimes. I often wonder if I'll ever see my own locomotive in steam again, such is the dearth of possibilities out there in the current climate. However, good news like the return to steam of G 42 and 3526, and even the opening of the Alice Springs to Darwin railway, can really help to lift one's spirits, and serve as a gentle reminder that life is not necessarily all downhill from here!

Bruce Belbin

The Light Railway Research Society of Australia Inc. was formed in 1961 and caters for those interested in all facets of industrial, private, tourist and narrow gauge railways in this country and its offshore territories, past and present.

Members are actively involved in researching light railways in libraries and archives, interviewing knowledgeable first-hand participants and undertaking field work at industrial sites and in the forests.

Light Railways is the official publication of the Society. All articles and illustrations in this publication remain the copyright of the author and publisher. Material submitted is subject to editing, and publication is at the discretion of the Editor.

Articles, letters and photographs of historical and current interest are welcome. Contributions should be double spaced if typed or written. Electronic formats accepted in the common standards.

Material is accepted for publication in *Light Railways* on the provision that the Society has the right to reprint, with acknowledgement, any material published in *Light Railways*, or include this material in other Society publications.

Cover: *Beginning on page 16 of this isuue, Andrew Becker recalls a memorable journey that he and a friend took aboard an ore train on Tasmania's Emu Bay Railway in 1991. Twenty-eight years earlier, on 21 February 1963, when steam still ruled the EBR's rails, renowned railway photographer Peter Charrett made a similar journey and, as ASG No.16 (Islington 86/1944) paused for water at 32-mile tank, he recorded this evocative scene.*

"A Tribe of Little Beasties"

The wartime construction of the Captain Cook Graving Dock and the Domain Fuel Tanks, Sydney

by John Browning & Jim Longworth

Caldwell Engineering FLORA *at the bottom of the incline down from the central concrete mixing plant, 5 April 1943. One rake of empty concrete trucks is behind the locomotive and another rake is nearer the camera. Maintenance seems to be in progress with men chipping solidified concrete off the trucks and the locomotive's bonnet cover open for inspection. Photo: State Records NSW: CGS 12490, 6/4496, 203*

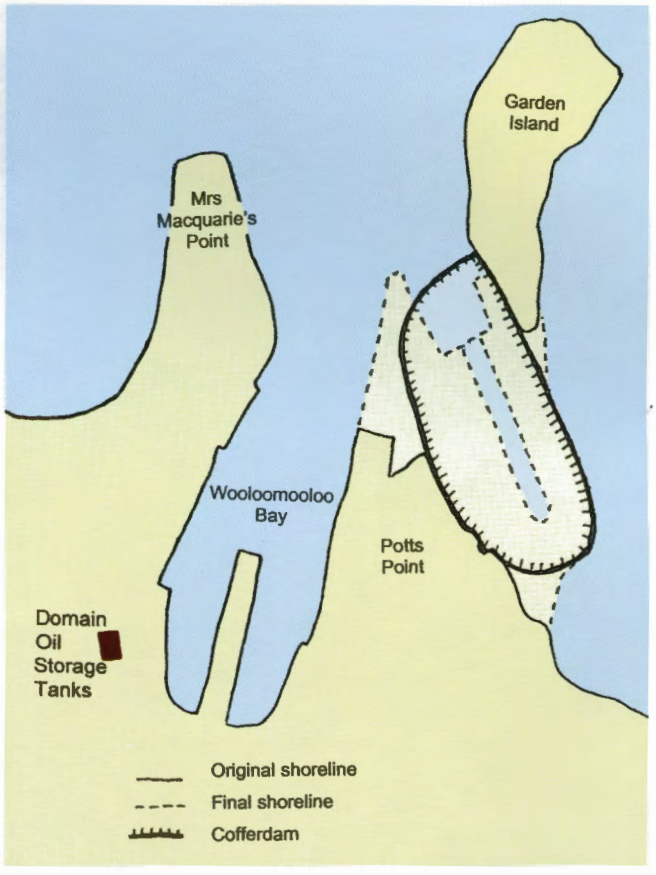
Introduction

The wartime construction of the Captain Cook Graving Dock between Garden Island and Potts Point on Sydney Harbour was a massive project carried out as part of the Allied war strategy, and was achieved through unprecedented efforts of government co-ordination. It was accomplished with the assistance of 2ft gauge railways, and at least ten internal-combustion locomotives worked there in the period 1942-44. Another project, the construction of oil storage tanks at the Domain, at around the same time, also used narrow gauge railway equipment.

Water Board wartime projects

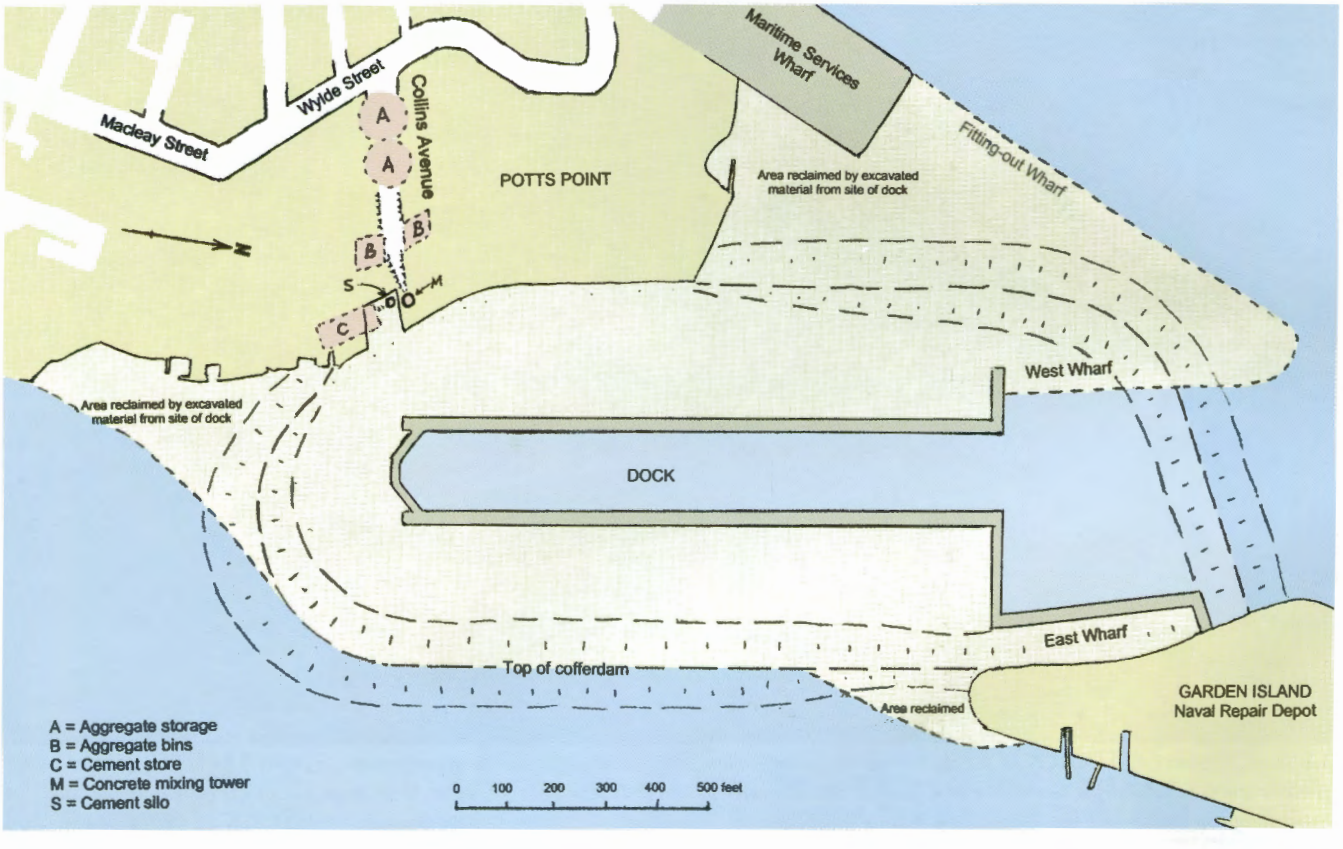
Work on dam construction in New South Wales was largely suspended with the onset of the Second World War, but the experience of the Metropolitan Water Sewerage and Drainage Board (MWS&DB) in mass concrete pours made it an ideal project authority for a number of major civil engineering tasks carried out during the war period. Notable among these was the construction of the Captain Cook Graving Dock, which was the Board's largest job during this period, and oil storage tanks at the Domain (and other places). MWS&DB's involvement in the construction of the Graving Dock was from early 1942 to around the start of 1945, with narrow gauge rail operations using locomotive haulage spanning a period from the second half of 1942 to early 1944. A short distance away at the Domain, the concrete tanks for oil fuel storage were constructed in late 1942, also using locomotive haulage.

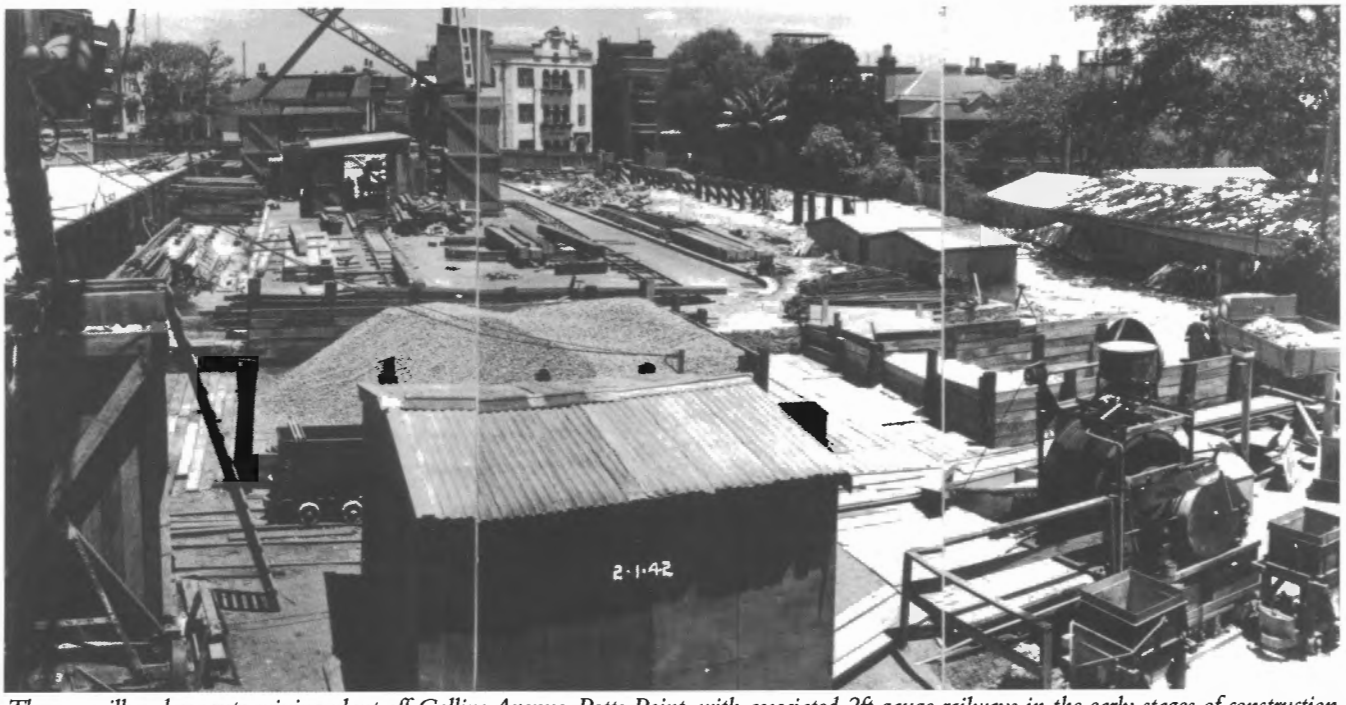
At each location, rail transport was used primarily to move concrete from mixing plants to the point of pour. The concrete containers were generally lifted from the rail trucks by overhead cranes for pouring, and replaced on them by the same means afterwards. It is believed that much of the track materials, locomotives and rolling stock came from the Board's stock of equipment. Construction railways being by their nature temporary, the rail lines used were very transitory but enough is known to be able to tell an interesting story.



Captain Cook Graving Dock construction

The Captain Cook Graving Dock was constructed as an urgent strategic requirement on the initiative of the Australian Government. Sixteen potential sites were examined, commencing in early 1939. The selected location, in Sydney Harbour between Garden Island and Potts Point, was approved in 1940 and preliminary work began in July 1940. The capture of Singapore by the Japanese in early 1942 made it essential for a dry dock





The sawmill and concrete mixing plant off Collins Avenue, Potts Point, with associated 2ft gauge railways in the early stages of construction of the Graving Dock, 2 January 1942. *Photo: State Records NSW: CGS 12490, 6/4495, 68*

capable of taking the largest naval vessels to be provided in Australia as soon as possible, and work was speeded up as a result.

The massive dock was officially opened on 24 March 1945, having been used by the British Pacific Fleet earlier in the same year. The dock forms part of the Garden Island naval base and connects the island to the mainland. Its basin is 1177 ft long, 137 ft wide and 55 ft deep.

The initial work for the dock construction involved the construction of embankments to enclose the 33 acres of Sydney Harbour between Potts Point and Garden Island. This took from December 1940 to February 1942. At the same time, dredging took place within the area being enclosed to remove soft material on the harbour bed. Once the two curved embankments were completed, they formed a cofferdam enabling the dewatering (235 million gallons) of the enclosed area, which was completed by early April 1942. This was followed by mechanical excavation to find suitable rock foundations for the dock, with the excavated material used for reclaiming nearby areas.

By early 1943, all soil excavation was completed and mass concreting had commenced to build the dock walls and floor in the centre of the excavation. After completion of the dock walls in early 1944, backfilling was carried out to bring the surrounds of the dock up to the level of the walls. Extensive further building and fitting-out work was carried out before the removal of the northern cofferdam wall and the admission of ocean water to the dock.

MWS&DB carried out its work on the project following plans and specifications drawn up by Sir Alexander Gibb and Partners in London. It had the responsibility for dewatering the area within the cofferdam, all dry excavation within the dewatered area, construction in concrete of the dock, the east wharf, a portion of the west wharf and certain associated works, and backfilling the areas between the cofferdam and dock walls.

A considerable number of photographs exist of this project, providing a significant primary source for researchers. Sydney photographers Herbert Fishwick were commissioned to make a record of construction, and visited the site early each month commencing in July 1941. Many of the resulting photographs can be seen at NSW State Records while others are in the National Archives and a number of private collections.

Early lines at the Graving Dock site

Preparation work for the construction of the central concrete plant for the dock construction was underway by late 1941. This involved the requisition and demolition of dwellings and the establishment of initial facilities on the level of Collins Avenue, Potts Point. The rock face below was cleared, excavated and stabilised to provide platforms on which material storage bins for concrete making were to be built. By October 1941, short sections of hand-worked 2ft gauge track were in use for the rock face work. By the end of January 1942, a temporary sawmill and small concrete mixing plant had been established at the Collins Avenue level, each served by short 2ft gauge lines. They provided materials for the construction of the storage bins and for the central concrete mixing plant at the foot of the cliff, and no doubt for other preliminary construction work.

By the second half of 1942, excavation of the dewatered dock area had progressed to a stage where preparations could commence for the mass concrete construction that was to follow. By early August 1942, a temporary 2ft gauge line had been laid inside the area directly beneath the eastern cofferdam wall, and some rolling stock had arrived. Ashes or clinker were used to provide a rough trackbed for the line, which extended along most of the eastern side of the site and incorporated a number of spur lines. Apart from a number of concrete skips, some scattered around and some on the track, four locomotives were parked on this track on 1 August. Two were Ruston & Hornsby 4wDM locomotives, one in weathered original livery, and two were Caldwell Engineering 4wDM locomotives. On 3 September, the Ruston & Hornsby locomotives, by now named *BETTY* and *CONNIE*, were in use hauling concrete, possibly in preparation for construction of the eastern wharf which was to lie outside the dry dock along the south western face of Garden Island. A month later, the four locomotives were all parked once again. They had been moved away elsewhere on the site by November.

On 3 December, Ruston & Hornsby *BETTY* was on another short line inside the cofferdam on the north west side of the site, possibly in connection with work on the foundations of the west wing wall at the entrance to the dock. It was still there in February 1943.

The Domain Tanks concreting

In the period leading up to the commencement of work on the Graving Dock walls, a separate project to provide wartime fuel storage was in progress way not far away. The Domain Oil Fuel Tanks were built on the western side of Wooloomooloo Bay, between Lincoln Crescent and the Domain.

Excavation of space for the tanks was by mechanical shovels and road trucks. The concreting of the floors and walls in late 1942 involved the use of a 2ft gauge construction railway. The concrete plant consisted of four separate mixers, located in the Domain, high on a cliff behind the site. Concrete was gravity fed down four chutes to a single lower chute.

Locomotives hauled rakes of skips from the delivery chute to the placement points. Looking like a child's toy train, track looped around the floor level of the tanks just inside the wall. A series of turnouts enabled the track to cross the floor space to allow for concrete delivery near to the points of placement.

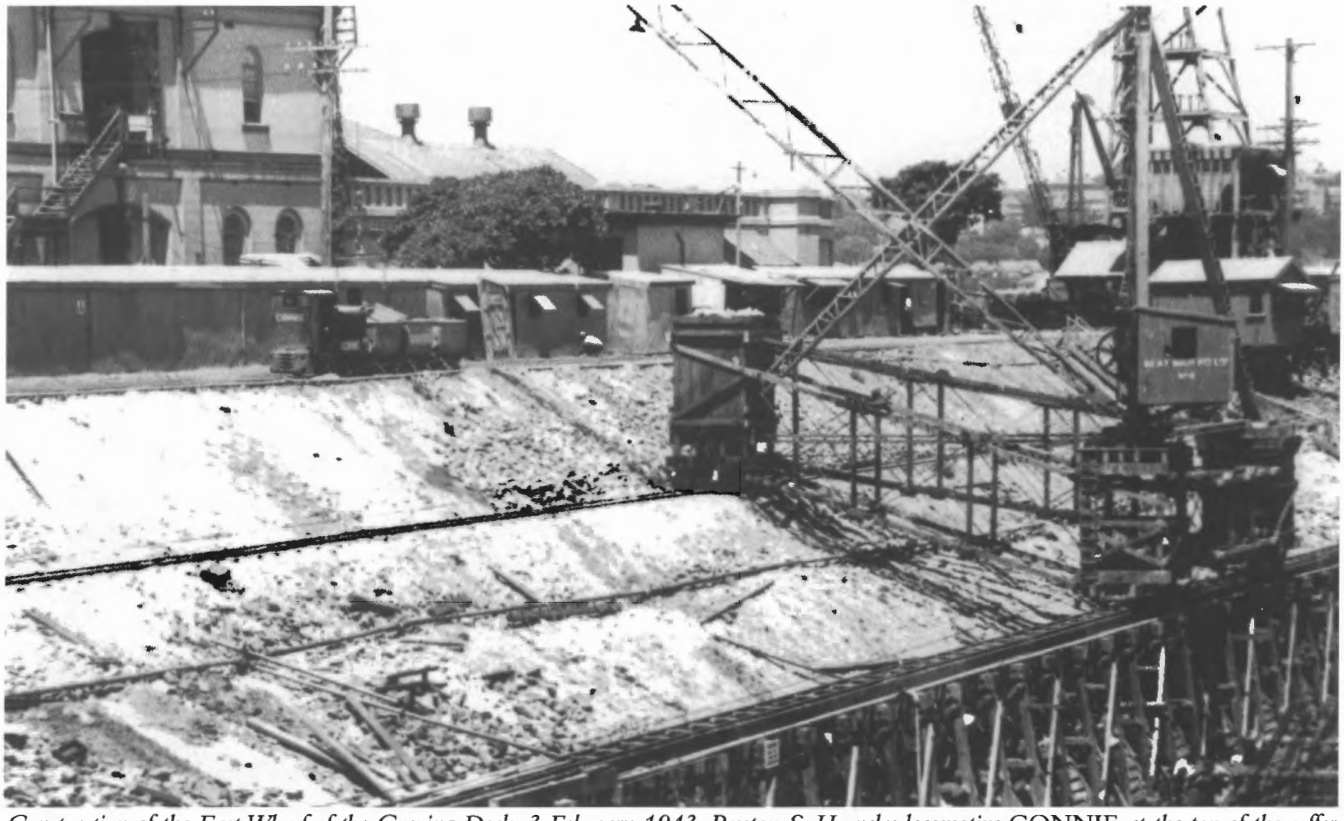
The two 0-4-0PM or DM locomotives were probably built by Days Engineering in Melbourne. They were named *DORIS* and *EVA* and were later used for the Graving Dock construction. Two types of skips were used, both with the body lifted by crane to enable the concrete to be poured. One type appeared to be the standard Water Board Hudson side tipping skip carried on an underframe with inside axleboxes and with the addition to the body of a lifting beam. The other was a simple kibble truck placed on a simple underframe with outside axleboxes.

The East Wharf

Back at the Graving Dock site, the East Wharf, 53 feet high and approximately 630 feet long, was constructed to the north east of the dock entrance adjacent to the Garden Island Naval Establishment. Construction of this wharf required the excavation of a timbered trench in the cofferdam filling, behind and for the full length of the site of the base slab for the wharf. In the trench was erected an elevated timber trestle structure carrying a 2ft gauge rail track. This was under construction by October 1942. Two further 2ft gauge lines were built along the cofferdam wall, one half way up and the other along the top. An electric stiff-legged derrick crane was placed on the 2ft gauge line on the trestles, carried on two short timber towers on flanged wheels and connected by timber trusses. One tower supported the king post and the other a back leg. The second back leg was carried on the track halfway up the cofferdam wall. Timber counterweight boxes were built over the back legs, filled with ballast, while the crane cabin over the king post was lettered 'BEAT BROS PTY LTD No.6'. Two winches, one at each end of the track, moved the crane. Hand winches were used at first but were soon discarded in favour of power winches. The crane was used to place concrete for the east wall.

There was a separate concrete mixing plant for the East Wharf, which also served for the construction of the East Return Wall, pumping station, and associated works. The line running along the top of the cofferdam appears to have been used for concrete delivery to the East Wharf, commencing in

The Domain Oil Tanks Construction. Days locomotives DORIS *and* EVA, *with skips at the bottom of the concrete delivery chute, 23 September 1942.* *Photo: Jim Longworth collection*



Construction of the East Wharf of the Graving Dock, 3 February 1943. Ruston & Hornsby locomotive CONNIE *at the top of the coffer dam wall with the derrick crane assembly running on narrow gauge tracks on the two parallel tracks below. Photo: Jim Longworth collection*

January 1943. Early in February, one of the Ruston & Hornsby locomotives, *CONNIE*, was on this line with three concrete skips, while the two Caldwell Engineering locomotives were parked further north. Following the removal of these locomotives for concreting in the dock itself, other locomotives photographed on this line along the top of the eastern cofferdam were the Frank Saunders 4wPM *HILDA* in March and April, and Purcell 4wPM *ALICE* in April. Concreting operations for the East Wharf took about five months. By early May 1943, *HILDA* and *ALICE* with some concrete skips had been removed to a storage line at the southern end of the track laid along the eastern cofferdam wall. Here they joined a large, dark-coloured locomotive named *IVY*, apparently a Gibson Battle petrol-electric. *HILDA* and *ALICE* had disappeared from this area a month later but *IVY* remained, only to be gone by July 1943.

Concrete pouring for the Graving Dock walls

As excavation came to an end in late 1942, preparations for concreting the dock walls and floor were well advanced. The basis of the dock was to be two parallel east and west concrete retaining walls standing 68 ft above foundations, with a concrete floor slab a minimum of 5 ft thick (and usually much thicker) between them. A south wall was to link the two parallel walls at the closed end of the dock. The two outside lines of concrete floor blocks were laid first, starting from the north end and using motor lorries to carry pairs of concrete skips. These blocks were to provide the foundation for the travelling gantries and the narrow gauge railway tracks that were to be used for further concrete distribution.

To enable concrete to be placed wherever required within the dock area, five travelling gantries were provided. These ran on a pair of 107lb rails, 116 feet apart, that were placed immediately on the inside of the line of the future dock walls. Each gantry carried two telphers although in practice only one was needed on most occasions. Immediately inside the gantry tracks, two parallel 2ft gauge lines were to be laid to form the concrete distribution railway. These were to run the full length of both sides of the dock basin, allowing for the distribution of concrete for floor and wall construction.

As the gantry track was gradually being extended southward in the dock, a rail incline was being prepared to bring concrete down into the dock excavation from the central concrete plant at the south west of the site. Work had commenced on the incline construction by December 1942. Double track was laid on a concrete ramp on a 1 in 6 gradient. The incline passed under a roadway as it descended from the mixing tower. It was rope worked using 2-drum Goninan electric winches. At the bottom of the incline, locomotive haulage took over. A staging was built using tubular scaffolding to take the track along a curved line from the bottom of the incline to the level of the dock floor.

As the laying of floor blocks had not reached the south end of the dock by the time the railway was needed, the double track with multiple crossovers initially ran down the centre line of the dock along an earth embankment until reaching the completed blocks. As the floor blocks advanced southwards, the track arrangements changed allowing the progressive elimination of the line in the centre of the dock. A section of the scaffolding staging was replaced in April 1943 to bring the track directly onto the western floor blocks. A disrupting factor on the eastern side was the need to make the excavations at the south east corner of the dock deeper than expected, delaying progress. The scaffolding staging was eventually built out. An extremely intense system of rail operating was used, with the concrete plant capable of loading a train at intervals of less than five minutes. This activity was largely concentrated into the period from March to December 1943.

A large number of locomotives were needed to operate the concrete trains on the dock floor. The Ruston & Hornsby and Caldwell Engineering diesel locomotives (the latter by now named *FLORA* and *GWEN*) together with at least one of the Days units seem to have been in use in March 1943, with the

second Days definitely in use by April. *HILDA* and *ALICE* were also photographed on the dock floor in early July, although it does not seem that *ALICE* was actually pictured in use.

With the side walls nearing completion late in 1943, attention turned to the south wall. However, the railway within the dock was still needed for the final stage of mass concrete pouring. The concreted dock floor had been used not only for the crane and concrete transportation railway, but also for a mass of temporary buildings and storage areas. Workshops, stores, mess areas, toilets for the workforce and vast amounts of construction materials had to be progressively removed to enable the final 2ft thickness of concrete to be placed to bring the dock floor up to final height. This work was well underway in late November 1943, and the rail lines were gradually removed as the massive concreting project came to an end, commencing at the northern end of the dock. It seems that during January 1944, the last pours were made and the concrete delivery railway ceased to exist.

Concrete direction and transport

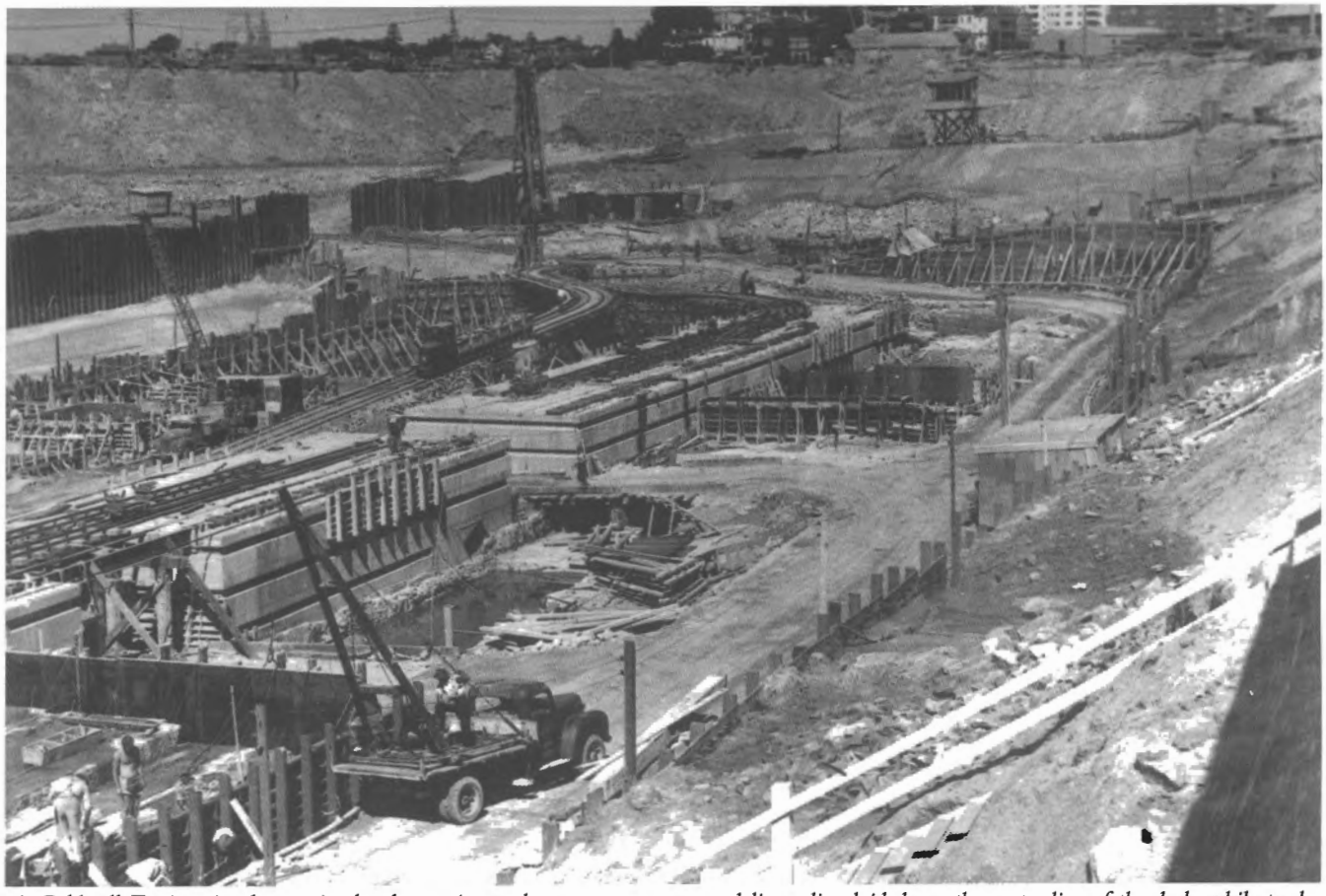
The central concrete plant provided a maximum daily output of 2000 cubic yards, or 80 cubic yards per hour. Stockpiles of material were placed at the eastern end of Collins Avenue, which was taken over for this purpose, and as far as possible, gravitation was used to assist the movement of materials. Aggregate from river deposits or quarries, as well as sand from the coastal dunes, came to the construction site by motor lorry. Bulk cement was railed from Berrima to Darling Harbour and barged to the Graving Dock construction site. There were seven different types of concrete used, and these had to be batched and mixed accurately and without delay. A *Mixer Controller* controlled all operations in the mixing tower, assisted by a *Concrete Batcher* and a *Concrete Controller*. Each 2-cubic yard batch could be batched in 30 - 40 seconds, and mixing took place for two minutes in one of three mixers.

A *Concrete Director* controlled distribution of the various types of concrete from the concrete plant to placement point from a commanding position overlooking the dock. *Placing Overseers* phoned their requirements to the concrete director in 6 cubic yard batches, the capacity of one train, and the orders were passed on to the concrete controller.

Concrete from the collecting hopper in the mixing tower was discharged into narrow gauge skips under the control of the *Concrete Despatcher*. A tag was placed on each truck indicating the type of concrete mixture carried. The concrete despatcher was responsible for starting the loaded train down the roped worked incline. An automatic signal informed the *Shunter* at the bottom of the incline that a train of loaded skips was on its way. The shunter received directions as to the route and destination of each train from the concrete director, who could observe the mixture tags. At the base of the incline the ropes were disconnected, and locomotives took over control of the trains, being despatched to their destinations by the shunter.

Some photographs show locomotives carrying a chalked headboard indicating the particular section of the dock for which its load was destined, such as 'UNIT E18' and 'UNIT W13'. On arrival at the destination, the mixture tags were removed by the placing overseer, and retained for checking by the concrete director at the end of each shift.

Each locomotive handled a train of six one cubic yard skips, and the large concrete plant had the capacity to fill thirteen such trains every hour. Because of the need to concentrate all available manufacturing capacity on armaments production, the concrete skips used were existing standard Water Board Hudson tipping vehicles adapted for the job. A hinged flap



A Caldwell Engineering locomotive heads a train on the temporary concrete delivery line laid down the centre line of the dock, while tracklaying for the telpher cranes and concrete delivery lines is proceeding on the western floor blocks, 6 April 1943. The cabin on stilts at the top right appears to be the vantage point of the Concrete Director. *Photo: Bruce Macdonald collection*

Gibson Battle IVY, *Purcell* ALICE *and Frank Saunders* HILDA *on a storage line on the eastern coffer dam wall, 3 May 1943.*
Photo: Bruce Macdonald collection

for emptying had been cut in the bottom of the skip bodies, and a lifting beam was also fitted. The skip bodies were carried on underframes with inside axleboxes. To minimise concrete spilling over the ends of the skips when being lowered on the incline, the height of each skip body was increased by 4 inches.

On arrival near the point of placement within the dock area, each tub was hoisted up and across for delivery by a three-ton telpher mounted on the transporter gantry. After emptying, the skip body was replaced on its chassis for return to the mixing plant. The same skip bodies could also be moved around the site in pairs on the back of motor trucks. This was the method used to lay the initial floor blocks before the installation of telpher cranes and distribution railway, and was used subsequently for other concreting jobs away from the railway.

Concreting work was carried on for 24 hours a day, and, for part of the construction period, seven days a week, although a five-week strike in September–October 1943 brought about a pause in the frenetic activity. The erection of formwork was given priority in daytime, so the bulk of concrete placement was done under floodlights during the hours of darkness. The greatest quantity of concrete poured in any one day was 1960 cubic yards, with 34 340 cubic yards the record for any four-week period, and 262 000 cubic yards in a year. These figures probably include concrete mixed at auxiliary concrete plants, but nevertheless are very fine testimony to the work of the 2ft gauge railway, indicating that hundreds of trains could run each day. The aggregate and sand alone delivered to the site amounted to close to half a million tons of material.

Graving Dock precast pile yards

At the Graving Dock, reinforced concrete piles were also cast, and a rail system served the mixing plant and precasting yard with tracks connecting it with the pile storage area and the sites of the pile driving frames where the piles were driven. One such site was the West Wharf, constructed to the west of the dock entrance. There is comparatively little photographic evidence of the pile lines.

The concrete pile casting facilities were situated on the western side of the construction site. The casting plant was situated in the area of reclaimed land at the northern end of Potts Point and was constructed by July 1943, with casting commencing in August. More than 750 piles were made, mostly 18ins x 18ins and 60ft long on average, as well as "A" frames and numerous blocks shaped for various purposes. A separate mixing plant was built, to which sand and aggregate were brought from storage bins by narrow gauge rail transport. The storage bins were arranged in a line with a 2ft gauge railway underneath, and the batched material was taken to the mixing plant in Hudson skips. Flat top rail trucks carried bags of cement from a nearby storage shed. Prepared concrete was discharged from the mixers into 2ft gauge skips below for transport to the adjacent casting yard. Parallel narrow gauge tracks in the yard carried a pair of timber truss transporter gantries. Once cured, each pile was lifted by the timber transporter gantries and placed on a pair of specially-constructed rail bogies fitted with turntable-mounted cradles. It was then hauled by a locomotive to a storage area or to one of three

A rake of loaded concrete skips descends the incline while a Days locomotive waits at the bottom, near HILDA, *which is off the track nearby.* BETTY *propels a rake of empties towards the incline foot. Track is nearly completed along the eastern line of floor blocks, which will allow the removal of the lines along the centre line of the dock, 3 June 1943.* *Photo: Jim Longworth collection*

pile driving frames for driving. Casting work seems to have finished by the end of June 1944, followed by the dismantling of the casting plant.

Following the completion of sections of the western dock wall, the backfilling of material created an area where a pile stockyard was built. It was in use by November 1943. This area was served by a pair of timber trestle-like transporter gantries straddling the storage area and a single rail track for bringing piles in and out. A small four-wheeled internal-combustion locomotive was photographed working in this area. By July 1944, a Days and a Caldwell Engineering locomotive were parked in this area, which seemed to be in the process of being cleared. The following month, only a Days locomotive was left and at the start of September the area was deserted.

The locomotives

The small locomotives used on these wartime projects were an interesting collection, each on four wheels and generally weighing no more than 6 tons. At least four were diesels, but petrol/paraffin seems to have been the fuel for some, and one at least had electric transmission.

Some of the locomotives are known to have belonged to the Water Board before the outbreak of war. Others do not seem to have much of a recorded history before their appearance at the Graving Dock. It is possible of course that some were ordered specially for these wartime projects. However, there were some earlier Water Board jobs which would have required locomotives, such as the 16 mile pipeline construction from Woronora to Penshurst, completed in 1941, for which a 2ft gauge line was used along some or all of the route.

Of great use to the researcher is the fact that most of the locomotives in the photographs carry names, arranged alphabetically: *ALICE, BETTY, CONNIE, DORIS, EVA, FLORA, GWEN, HILDA* and *IVY*. The names were about 6 inches in height painted in capital letters, apparently in white. They were found not only on cab sides but also in some cases on bonnet doors, side-frames and cab-ends depending on the design of the particular locomotive. The suggestion can be made that the recognition of each locomotive at a distance (and possibly the recording of its initial letter) may have been an important part of the concrete distribution system at both the Domain Tanks and the Graving Dock. There is no evidence that the one or two locomotives on which no names can be discerned were used for concrete distribution.

By mid-August 1943, some concern was being expressed about the need for further locomotives. Photographic evidence shows that all the nine named locomotives listed above had arrived before then. However, it was stated that two more were needed to cover any unexpected breakdowns in view of the scheduled maintenance that was now due. Concern was expressed that if three or four locomotives broke down and could not be repaired promptly, the work night be disrupted. Enquiries all over Australia had failed to find any other suitable locomotives, but by mid-September one had been obtained.

ALICE

The photographic evidence shows a loco with an open canopy and separate sections of bodywork in front of and behind the driving position. This locomotive can be identified as the 1917 Purcell 2½ ton 0-4-0PM which was obtained by MWS&DB for the lining of the Nepean Tunnel (see LR 105 and 111). The canopy, bonnet design, radiator, coupling rods and the shape of the back section of the bodywork are distinctive features. It was put into use only in 1921, but for it still be to be considered of possible use 20 years later is a tribute to its manufacturer in these early days of the internal-combustion locomotive. However, its low weight would have been a disadvantage and there is no photograph showing it in use at the Graving Dock.

BETTY & CONNIE

These two are definitely Ruston & Hornsby 4wDM 183063 & 183064, delivered to the Water Board in 1937 for use on the Woronora Dam construction project. They carried MWS&DB numbers 14 and 13 respectively, but it is not known which name was carried by which loco. They were 44/48hp locomotives with Ruston 4-cylinder engines and weighed between 5½ and 6½ tons. These locomotives had cab openings on the right side only. It appears that both were used on the Warragamba Dam construction project after the war. They were noted in Brisbane at a machinery merchant's yard in 1967, and one at least may still survive.

DORIS & EVA

This pair are of an 0-4-0DM or PM type, with Days Engineering likely to be the maker. The cast inside frames, solid disc wheels, coupling rods, overhangs at front and rear, and the front drawhook all appear to be typical Days features. Early Days locomotives were built for fitting with the power unit from an agricultural tractor, but later examples such as these appear to have been be designed as complete locomotives. *DORIS* and *EVA* were used for the Domain Oil Fuel Tanks construction project before being put into use at the Graving Dock. They probably weighed about 3 or 4 tons each and had a cab opening on the left side only.

However, a note of caution should be sounded. A number of suppliers tendered for very similar types on 3ft gauge in connection with the Wyangala Dam construction, some offering a Days loco and others claiming that the loco chassis would come from a manufacturer such as Armstrong Holland or Gibson Battle. In particular, Armstrong Holland Ltd of Sydney submitted a drawing of a locomotive not unlike *DORIS* and *EVA*, so it would be interesting to learn which Australian companies supplied such machines of 2ft gauge to the Water Board in the immediate pre-war years. Nothing seems to be known of these locomotives after the war.

FLORA & GWEN

This pair were 4wDM locos from Caldwell Engineering, almost certainly constructed by Kelly & Lewis under sub-contract (see LR 102). They were fitted with Fowler engine units, and according to Felix Caldwell himself weighed 5 tons. It seems that just two of these locomotives were supplied new to MWS&DB. The date seems uncertain, but 1940 has been suggested.

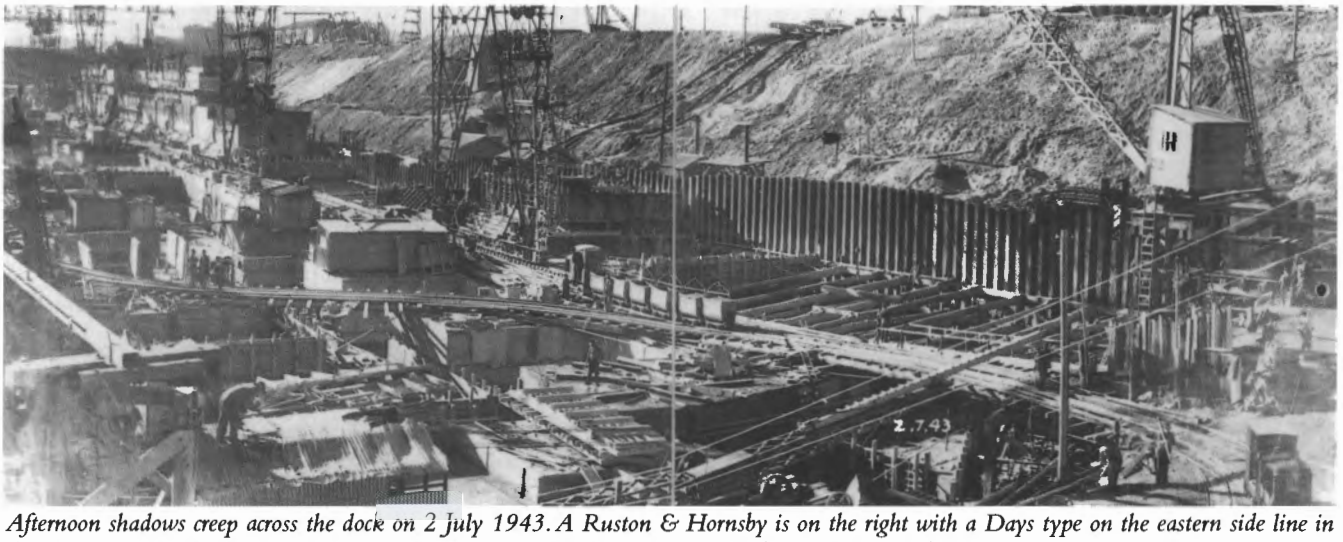
FLORA was noted at The Rock (NSW), widened to standard gauge, in about 1961, and with the number 18 stamped into its front headstock. It is believed to have been used for the dismantling of the NSWGR line from The Rock to Westby near Wagga Wagga. It had the exhaust pipe in a different position from when photographed at the Graving Dock, suggesting it may have received a new engine by then. It seems likely that *FLORA* is the locomotive that was later at Uptons Engineering at Corowa, in NSW, and the remains of which were acquired in 1987 by Alan Stebbing and moved to Belgrave South in Victoria in 1993.

Following the war, it seems that *GWEN* is the locomotive which, regauged to 2ft 6ins, was used by Tony Carr, a contractor, on Victorian narrow gauge railway dismantling work between Walhalla and Erica in 1958. It was last reported derelict at Knott's Siding in 1961.

The cab doors of this type of loco are an interesting feature. There is a door on each side of the cab and the door hinge appears to be positioned around the centre of the cab side. On the left hand side of the loco, the doorway is to the front, (with the door folding back), while on the right hand side, the doorway is to the rear (the door folding forwards). This arrangement appears to be consistent in all the photographs viewed.

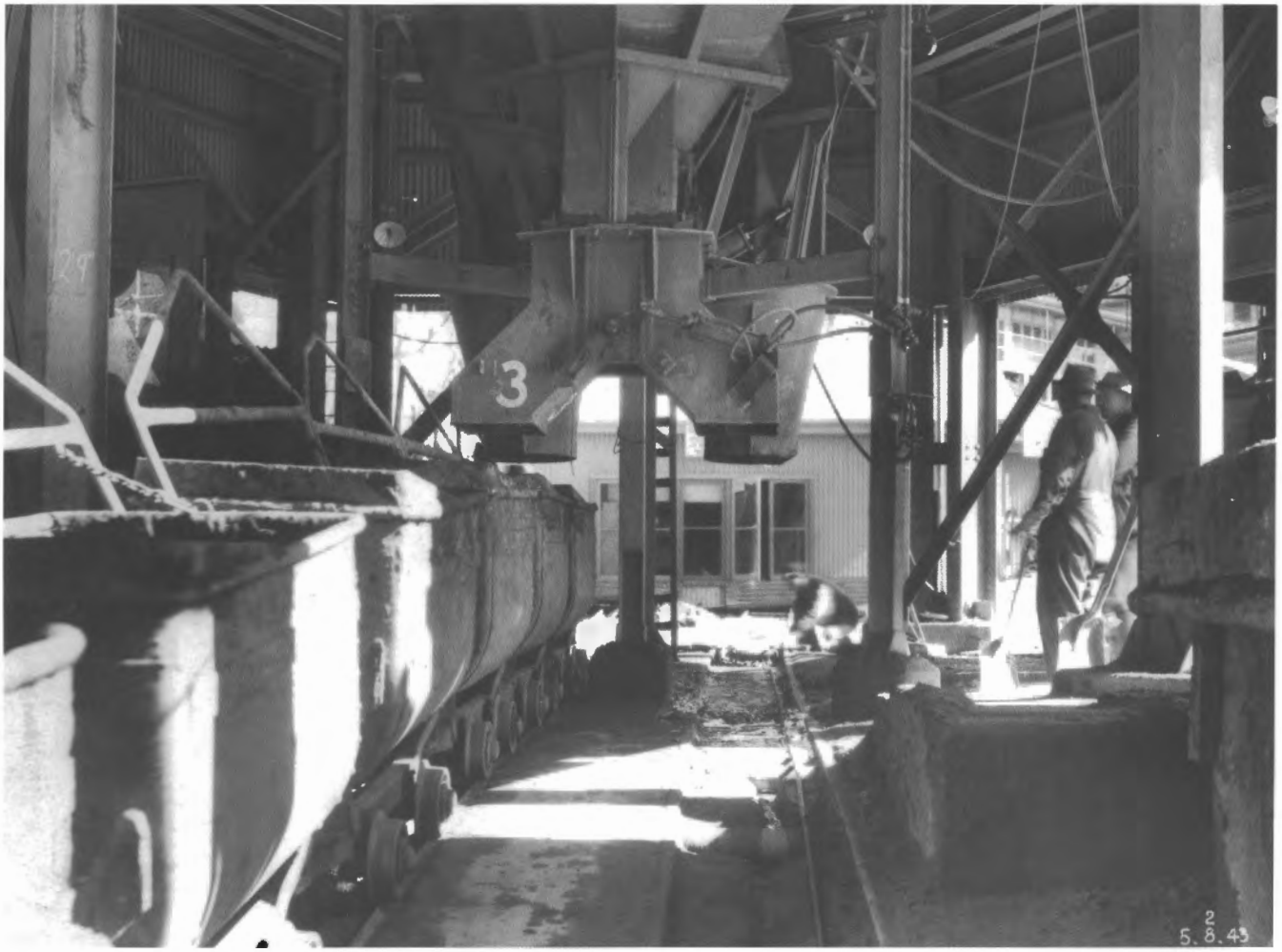
HILDA

HILDA can be identified as an outside-framed 20hp *Leader* 4wPM locomotive which worked on the Nepean Dam Construction. It seems to have much in common with other contemporary designs made to be fitted with a tractor power unit (eg Days, Malcolm Moore, Muir Hill) but with a sophisticated

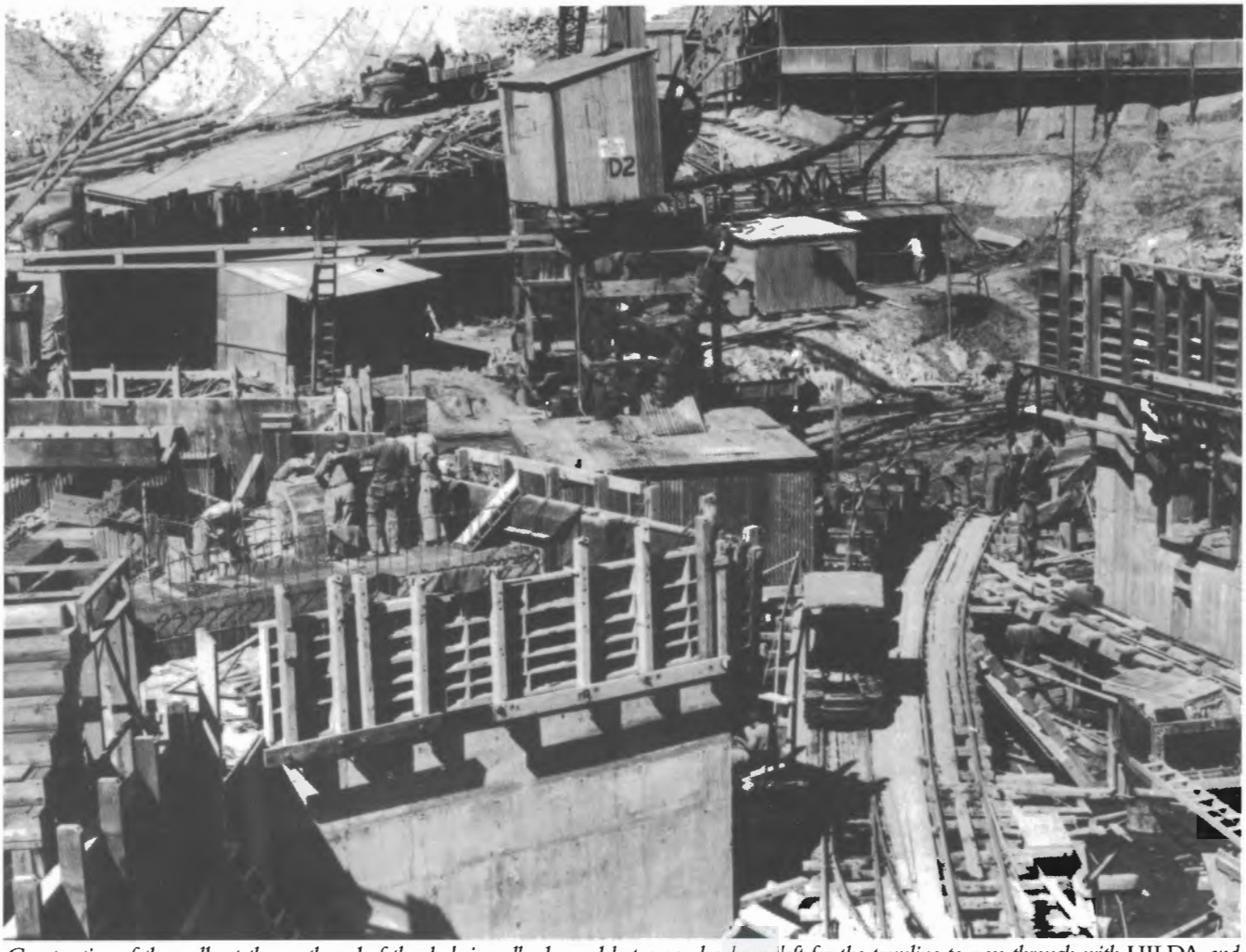


Afternoon shadows creep across the dock on 2 July 1943. A Ruston & Hornsby is on the right with a Days type on the eastern side line in the centre and another in the far distance. HILDA *is lurking behind the shed left of centre. The telpher cranes are now fully operational while the centre of the dock floor is rapidly becoming covered by a mass of buildings and equipment.* *Photo: Bruce Macdonald collection*

Another afternoon shot on 4 August 1943 shows that impressive progress has been made on the dock walls in the last month. Caldwell Vale GWEN *takes pride of place and seems to have a piece of corrugated iron attached to the end of its cab to keep out the winter air. The cab of a Days locomotive is visible front left.* *Photo: Jim Longworth collection*



Loading Hudson concrete skips at the central mixing plant, 5 August 1943, with the winding house visible behind. Photo: Jim Longworth collection



Construction of the walls at the south end of the dock is well advanced but a gap has been left for the tramline to pass through with HILDA *and train occupying one of the pair of tracks, 2 September 1943.* *Photo: State Records NSW: CGS 12490, 6/4497, 342*

The small locomotive handling a set of pile bogies at the pile storage yard, 3 November 1943. Note the long connecting bar. The overhead lifting gantry runs on 2ft gauge track. *Photo: Jim Longworth collection*

Backfilling behind the western walls of the dock has been completed and the pile storage yard can be seen on the right with piles stacked beneath the lifting gantry, 2 November 1943. The line running from the storage yard connects it with the pile casting yard.
Photo: National Archives of Australia: A2908, D7/1 Part 1 Graving Dock Sydney - Progress Report. Part 1, 1941-1945 (folio 373)

type of framing (possibly made as a casting) and a stylish and very lengthy cab with a circular side window. It probably weighed up to 4 tons. In one photograph taken at the Nepean Dam Quarry, the cab seems complete, with openings at each side and at the rear. In a photograph at Nepean taken by Giff Eardley, the right hand side of the cab has been opened up by removing the rear section. When photographed at the Graving Dock, it can be seen that both sides of the cab have been opened up, leaving a long overhang of the cab roof. It is said that two such locomotives worked at Nepean Dam.

The *Leader* locomotive must have been in service at Nepean before tenders closed for the Wyangala Dam work in 1929-30 because a photograph of it there appears in tender documents for the supply of 3ft gauge locomotives for Wyangala, and 1927 seems the likeliest date of ordering. The 1929 Wyangala Dam tender documents indicate that Frank Saunders Ltd, Sydney, proposed a 3ft gauge 4-ton locomotive with a "Continental" Red Seal engine. It would seem likely that this was to be similar to the type previously supplied for Nepean. Saunders' 1929 tender specified that the locomotive would have a "Leader" chassis built in the USA but a similar tender the following year specified a "Saunders" chassis, presumably to be built in Sydney.

It may be that the chassis of the Leader locomotive came from the USA, but its bodywork seems uniquely Australian as far as can be judged.

IVY

This large, dark locomotive with substantial cowling-type bodywork and a cab open to the rear was stored on site for a few months in 1943 and then apparently disappeared from the photographer's view. Judging by its size, a weight of about 8 tons seems likely.

It appears that Gibson Battle & Co Ltd of Kent Street in Sydney supplied (and probably constructed) this locomotive, and that it was a 4wPE. However, details of this builder's products appear to be elusive, although there are copy drawings of a small number of their petrol-electric designs in existence.

Ken McCarthy is said to have suggested that a 2ft gauge Gibson Battle locomotive worked on the Avon Dam construction, which took place between 1921 and 1927. In 1929, Gibson Battle tendered for the supply of a 3ft gauge 10-ton petrol locomotive for the Wyangala Dam construction. It was to have a chassis built by Gibson Battle, and a "Continental" Red Seal engine.

A drawing exists of a Gibson Battle 2ft gauge 8-ton 4wPE locomotive, dated 3/9/1929, and this appears to be the type photographed at the Graving Dock. The design features a locomotive divided into three parts. The rear part has a full-width cab, open at the back. The front part has a narrow engine compartment. The middle segment is full-width and lower in height than the engine compartment. It appears to contain a generator mounted fore-and-aft on the right hand

The possible second locomotive in the pile casting yard, 3 November 1943. It appears to have a radiator similar to the locomotive photographed in the pile storage yard. *Photo: Jim Longworth collection*

side, and a transversely-mounted electric motor to the left of centre, which drives a shaft upon which is mounted a flywheel. The shaft in turn drives the front axle through a chain. The imbalance of weight to the right caused by the placement of generator and motor is corrected by the positioning of ballast weights on the left side. This unusual locomotive had a rather ungainly appearance. A similar locomotive, derelict, was photographed by Ken McCarthy at the blue metal quarry at Pikes Hill, Kiama, in July 1962.

It seems unlikely that this locomotive was used for concrete haulage at the Graving Dock. Its axle load might have been on the high side, but it is possible that it found use somewhere else on site, for example in connection with pile manufacture and storage.

Concrete Pile casting yard /stockyard locomotive(s)

One photograph shows a small light coloured 4w diesel or petrol locomotive, perhaps 1½ ton weight, involved in moving a concrete pile at the stockyard. It is distinctive in design with outside frames and coil springs. There is no cab. This locomotive has so far defied identification of its builder although the radiator profile is similar to one featured on a Gibson Battle petrol-electric locomotive drawing dated 1929. Bruce Macdonald indicates that "KITTY" has been given as an additional locomotive name at the Graving Dock although no name is visible on the photographs. This begs the question about a possible locomotive with a name starting with "J".

The answer might be found in another photograph that seems to feature what could be a further small locomotive on a short isolated line in the casting yard. It seems to have a radiator assembly similar to the one mentioned above although its other details are unclear and somewhat puzzling. Any comments to assist with a more definite identification would be very gratefully received.

One or both of these locomotives appear likely to have been obtained after mid-August 1943, as explained earlier.

Standard gauge Graving Dock lines

Some short temporary standard gauge stockyard lines for cranes were used at the north west corner of the Graving Dock construction site. Two separate lines were involved, each with one crane, and they were resited in mid 1942 after dewatering finished. Each crane was four-wheeled in design and was involved in unloading and shifting heavy items. One crane was a large electric machine with a commodious cabin equipped with many windows. It was on site by August 1941. The second was a somewhat smaller and more homely steam crane. It seems to have carried the number 170 on its swivelling cabin and 'CA†10' on its chassis, and was on site by September 1941. Other short lengths of track may have been used for rail-mounted cranes in other parts of the site as the project neared completion.

Following completion of the dock walls, standard gauge railway lines were laid on both sides to accommodate large electric cranes that were designed to be used in association with the Graving Dock's operations.

Conclusion

The further story of the origin and fate of the narrow gauge locomotives used at the Graving Dock and Domain Tanks construction projects is likely to be a fascinating one. It is hoped that this article will stimulate the emergence of more information about the projects they may have worked on and on the rail systems which served them, not to mention the "tribe of little beasties" themselves.

Summary of locomotives at the Graving Dock construction site

ALICE	0-4-0PM	Purcell	1917
	ex Nepean Tunnel Construction		
BETTY	4wDM	Ruston & Hornsby	1937
	ex Woronora Dam Construction		
CONNIE	4wDM	Ruston & Hornsby	1937
	ex Woronora Dam Construction		
DORIS	0-4-0DM?	Days?	
	also used for Domain Oil Tanks		
EVA	0-4-0DM?	Days?	
	also used for Domain Oil Tanks		
FLORA	4wDM	Caldwell Engineering	1940?
	built by Kelly & Lewis		
GWEN	4wDM	Caldwell Engineering	1940?
	built by Kelly & Lewis		
HILDA	4wPM	Frank Saunders?	1927?
	ex Nepean Dam		
IVY	4wPE	Gibson Battle	1929?
	unknown if put into use at Graving Dock		
?	4wPM?		
	pile yard		
?	4wPM?		
	possible locomotive at casting yard		

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The view from the cab of 1101 as the train passes through scenery typical of the Guildford – Primrose section of the EBR.

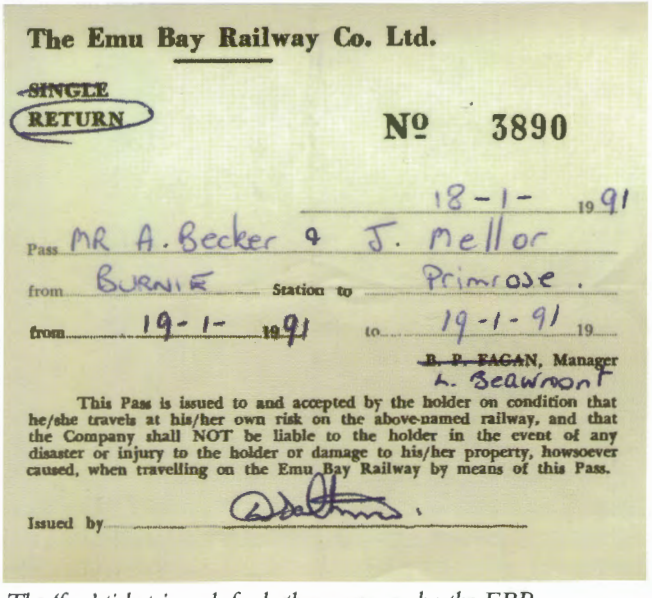
The Emu Bay in a day

by Andrew Becker (photos by the author)

In 1991 my flatmate, Jim, and I decided to ride our bikes from Launceston to Smithton on Tasmania's northwest coast during our summer vacation. One of the places we visited was the Don River Railway at Devonport where we met Darrell Luke, one of the volunteer drivers. We were invited for a cab ride on ex-Tasmanian Government Railways CCS 25 (Beyer Peacock 4417/1902)[1] and during the trip we discovered that Darrell's day job was driving ore trains on the Emu Bay Railway (EBR). I'd always been fascinated with the EBR, mainly due to its perseverance with Australian Standard Garratt (ASG) locos, despite them having a poor reputation on other railway systems. Darrell described them as "race-horses", which was the first time I'd heard anything positive about them.

The EBR was also interesting because of the rugged country it passed through and the fact that it had once connected the Government mainline at Burnie with the isolated government line between Zeehan and Strahan. To my amazement, Darrell mentioned that it was still possible to obtain a ticket for the EBR and travel from Burnie to Primrose (about 110 km south-west) on the ore concentrate train, returning the same day. This was an offer too good to pass up, as we hadn't made any plans to see any of the west coast, mainly because the terrain looked to be particularly bike unfriendly. It didn't take much to convince Jim to come along for the ride, so we agreed to check it out when we got to Burnie, the EBR's northern terminus.

On reaching Burnie and having found the company office we signed an indemnity form and were issued our ticket, which surprisingly cost us nothing. That night we stayed at one of Burnie's hotels in preparation for the early start next morning. I seem to remember Jim didn't appear to be as enthusiastic at 5:00am the next morning as we walked down to the railway yard in pitch dark, but that was just too bad. As we approached the EBR end of the yard we found the train of empty ore wagons waiting with three 11 class locos and one 10 class loco at the head. Coincidentally, Darrell was the driver that day and, with two other crew (including one trainee



The Emu Bay Railway Co. Ltd.

~~SINGLE~~
RETURN

Nº 3890

18-1- 1991

Pass MR A. Becker & J. Mellor

from BURNIE Station to Primrose.

from 19-1- 1991 to 19-1-91 19

~~B. P. EAGAN~~, Manager
L. Seawright

This Pass is issued to and accepted by the holder on condition that he/she travels at his/her own risk on the above-named railway, and that the Company shall NOT be liable to the holder in the event of any disaster or injury to the holder or damage to his/her property, howsoever caused, when travelling on the Emu Bay Railway by means of this Pass.

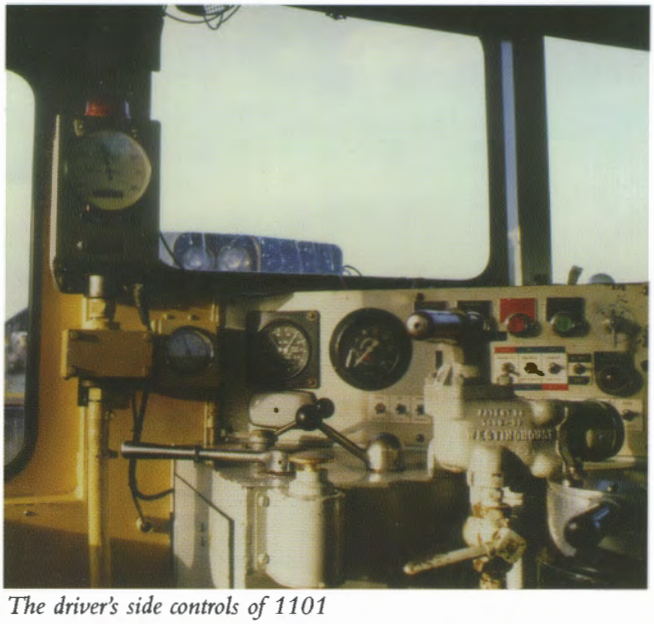
Issued by

The 'free' ticket issued, for both passengers, by the EBR

driver),would take us to Primrose and return. We hadn't quite realised that we would be travelling in the second loco, so when we were asked to board 1101 (Walkers 638/1969)[2] it dawned on us just how unique this trip was going to be. About twenty minutes later we headed out through South Burnie and once over the Brooklyn road crossing we commenced the steep climb from sea level.

The sky was just starting to get that early morning glow as we climbed the grade past numerous houses the occupants of which must have grown accustomed to the early morning EBR wake up call. The view from the driver's side seat of 1101 was impressive as we climbed those first few kilometres out of Burnie.

I'd visited Burnie about 10 years earlier with my parents during school holidays and had visited the EBR station building. Thanks to the Station Master I had left with a copy of the 1951 EBR Rules and Regulations handbook from a cupboard that was packed full of old EBR official publications. It was only when I flipped through one of the copies later that I discovered a number of EBR Staff Tickets that had been left inside, including one for the Primrose to Burnie section.



The driver's side controls of 1101

Meanwhile Jim had warmed to the idea that this day was in fact going to be worth the early morning start. By this stage we had settled in and prepared our cameras for what was to be a spectacular trip down a part of the west coast not normally seen by tourists. Having left the initial steep climb out of Burnie behind us, the countryside became a combination of undulating rural farmland and pine plantations. We eventually passed through the site of Ridgley, but apart from the siding I didn't notice anything of interest.

At about the halfway point we arrived at Guildford, which was once the junction for the Waratah branch, which closed around 1940.[3] We didn't stop, but I remember an antique passenger carriage with a clerestory roof, possibly EBR DB5 (ex-Tasmanian Government Railways) near the station site. It had been removed from its bogies and was plinthed at right angles to the railway, possibly to provide additional storage.

After Guildford, the next memorable location was Moory Junction, which is the highest point on the line and easily identifiable by the Murchison Highway overpass located almost right on the crest. Moory Junction is also where the relatively new (opened 1989) 11km branchline to the Hellyer mine leaves the mainline. By this stage of the journey the

THE EMU BAY RAILWAY COMPANY LTD.

No.

TRAIN STAFF TICKET

Train No.

To the Engine Driver,

You are authorised after seeing the Train Staff for the section, to proceed from

GUILDFORD PRIMROSE

- to -

BURNIE

and the Train Staff will follow.

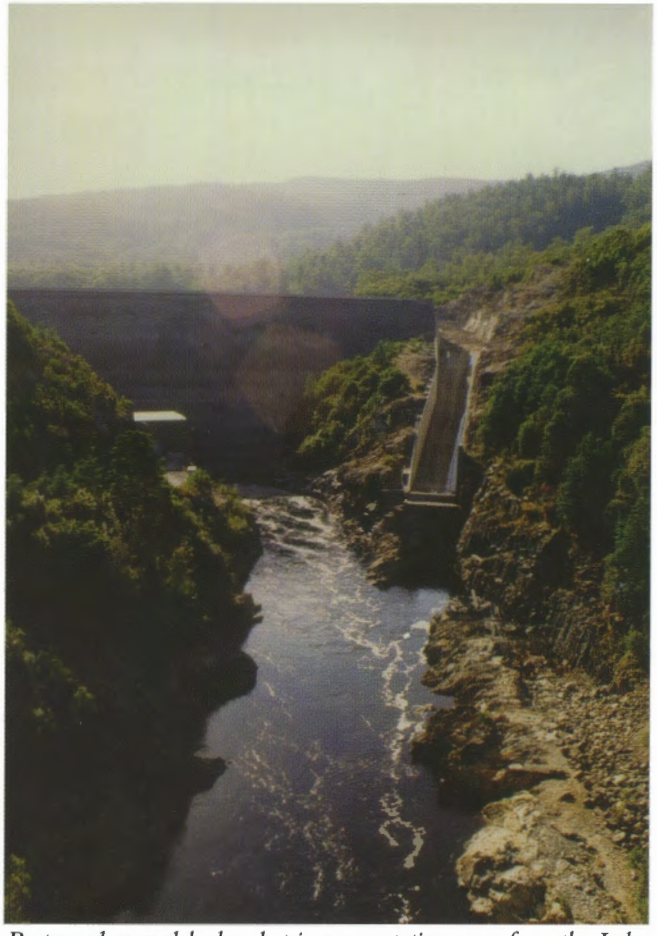
Signature of Person in Charge

Date (Over)

A Staff Ticket for the Primrose – Burnie section, discovered between the pages of an old EBR official publication.

country had become progressively more rugged and it was in this section that we took most of our photographs. At this stage that we were invited to the leading locomotive to meet the other crew and see how the locos were driven.

Continuing on, we passed through Bulgobac where I noticed two sets of very old star-spoked wheels sitting close to the mainline. There were also remnants of what was the company sawmill, but nothing else was identifiable at 35 km/h. Further along the line the train slowed to a crawl as we crossed the spectacular bridge over Lake Pieman. This was definitely the highlight of the trip. In 1987 the line here was diverted and a new bridge built to accommodate the damming of the Pieman River. From the bridge there are spectacular views of the Bastyan dam and hydro power station to the east.



Bastyan dam and hydro-electric power station, seen from the Lake Pieman bridge.

Not long after crossing Lake Pieman we arrived at Primrose. It was here that the ore wagons were filled with zinc/lead concentrate as the train was pushed through the loading facility. On departure from Primrose on the return journey, the diesel hydraulic locos roared and spewed sparks from their stacks as we struggled upgrade to Moory Junction with the loaded train.

No stops were made and during the descent into Burnie, Darrell came back from the leading loco and told us the story of ASG 20 (Commonwealth Land Transport Board ex G25 Clyde 476/1944) coming to grief in a fairly spectacular fashion on this section in 1962. ASG 20 was scrapped as a result of this derailment and the EBR purchased an additional ASG soon after, which was numbered 20A (CLTB ex G12 Islington 82/1944).

Driver Darrell Luke attending the points at Primrose with the ore loading facility in the background

The trip had taken about nine hours to complete. We thanked Darrell for an incredible day and walked back through the railway yard to our hotel. On the way, we came across a fairly dilapidated steam locomotive tender, that I assumed had come from EBR number 8 (Dubs 3856/1900, later named *HEEMSKIRK*). At the time, this loco was being restored by the Don River Railway in preparation for the EBR centenary celebrations in 1997.

That day spent on the EBR was a fantastic experience. I'm not sure if the trip can still be undertaken, given that the line was taken over by Tasrail in 1998.[4] It was certainly the highlight of the bike tour for me.

1103 (Walkers 640/1969) shortly after arrival at Primrosel.

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*The tender of EBR No.8 (*HEEMSKIRK*) in Burnie yard.*

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Special thanks to contributors to the Locoshed and Cane Trains e-groups
http://groups.yahoo.com/group/Locoshed
http://groups.yahoo.com/group/Canetrains

NEW SOUTH WALES

Equipment in transit

Seen at about 4pm on 3 February in Windsor Road, Kellyville, heading east (towards Sydney) was a semi-trailer carrying a Gemco 4wBE personnel carrier numbered 24. Any further details would be welcome.
Ray Graf 2/04

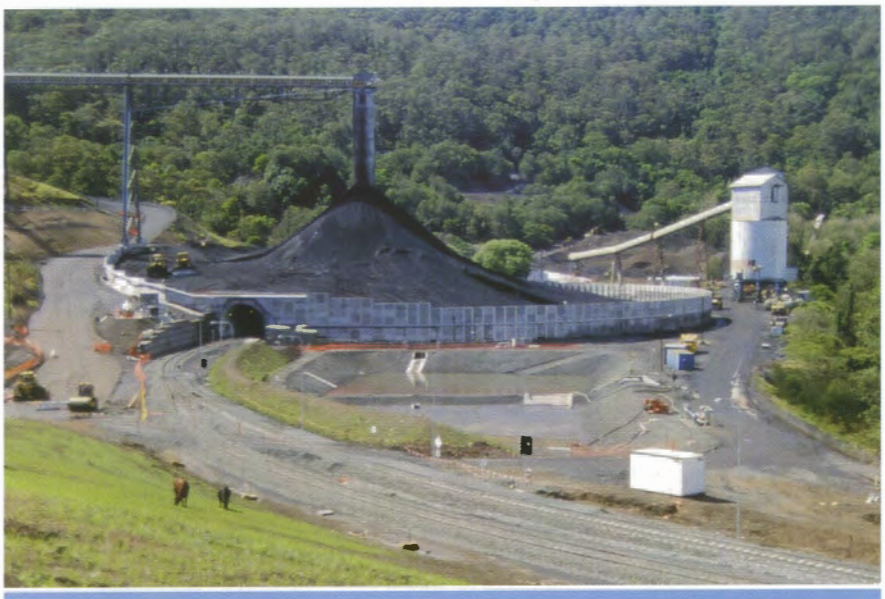
BLUESCOPE STEEL, Port Kembla

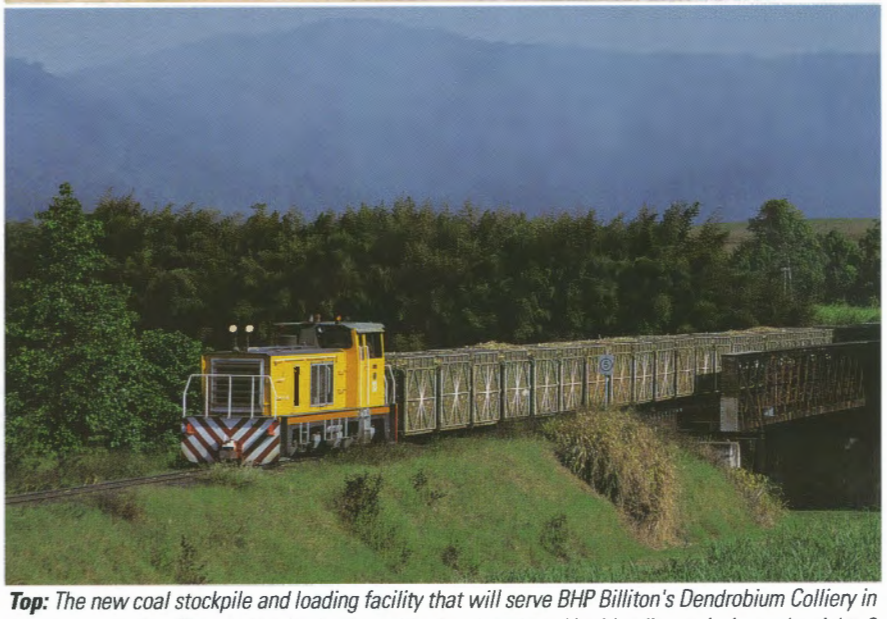
(see LR 175 p.18)
1435mm gauge

BHP Billiton Illawarra Coal is transferring the operation of coal trains from their collieries to Port Kembla from BlueScope rail operations to Pacific National's southern coal division. The operation will continue using the two 81 class locomotives that have been leased to BlueScope up until now, with contingency back-up by the Port Kembla intermodal 81 class shunter. Initially at least, the operation will not change greatly and will still be based on two trains in operation (two rakes with one 81 class each). The round sided BXLA wagons will remain in use, with ownership transferred to Pacific National. Four of these wagons had been repainted in Pacific National blue by 21 February, ready for the programmed transfer of operations on Monday 8 March. The straight sided BXLA wagons will be phased out, as they are only about 92 tonnes gross. The plan is to replace them with stored Pacific National NHVF wagons, which will make the Port Kembla coal fleet all 100 tonners.

BlueScope internal steelworks rail workings will still be handled by their own rail operations, so coal trains that terminate at Cringila will continue to be unloaded in the works by BlueScope crews and locos.

Preserved Clyde 0-6-0ST *BRONZEWING* (457 of





Top: *The new coal stockpile and loading facility that will serve BHP Billiton's Dendrobium Colliery in the Kemira Valley. The old Kemira loader, with abandoned trackbed leading to it, is on the right, 2 November 2003. Photo : Chris Stratton* ***Centre:*** *Broad gauge RT46 (Aresco Trak Chief, 1966), on the right, and RT35 (VR Newport, 1963) at the Deniliquin Associated Grain Storage Pty Ltd rail siding on 31 December 2003. RT35 was replaced by RT32 (VR, Newport, 1962) a few day later. Photo: Chris Stratton* ***Above:*** *On Sunday 26 October 2003, South Johnstone mill's B-B DH number 33* NYLETA *(Prof Engineering P.S.L.25.01 of 1990, rebuilt Sth Johnstone 1993)) crawls across the 5kph restricted Silver Bridge, over the South Johnstone River, with 94 loaded bins plus brake wagon 6. A bush fire on the Warrubullen Range has turned the background to a hazy blue. Photo: Scott Jesser*

THE DEER PARK EXPLOSIVES TRAMWAY, Victoria

by Ray Peace

Remove your wedding and engagement rings. Remove your watches. Wear protective goggles anytime you are out of the car. No cameras. (Later we got the cameras back after a second security check) If a thunderstorm appears likely, we leave the area immediately. Do not enter any buildings, and do not walk on any patches of white powder on the ground.

This is a light railway inspection? It was a party organised by Damian McCrohan of Railtrails Australia in December inspecting one of Victoria's most unusual light railways, the 2ft 6in (762mm) gauge network servicing the Initiating Explosives Systems Pty Ltd facility at Deer Park, in Melbourne's western suburbs, owned by Orica, and in former years ICI.

Traffic roared past a few hundred metres away on the western ring road, but inside the facility was an eerie world in itself, of massive bunkers enclosed between blast walls of earth and concrete, of lightning arresters stark against the lowering sky. And tramways, absolutely everywhere. Truncated rails of cut-off older networks suspended in space, tiny turntables and battery locos, formations criss-crossing where former networks were routed, a mix of crumbling timber and concrete sleepers. And everything we saw was doomed. By the time this article sees the light of print, most if not all of the network will be gone, bulldozed and torn up. The parts of the facility with the tramways are being de-commissioned as I write and are expected to be levelled by April 2004.

Our guide for the afternoon was Robert Taylor, an employee of Orica who has worked on and off at the facility since 1961, arriving as an apprentice fitter and turner and working his way up to maintenance foreman in 1972, and production supervisor between 1986 and 1992. Robert sees the final run of the tramway network as the end of an era, as indeed it is.

The Deer Park facility has a rich history, which unfortunately remains largely undocumented as most of the former employees who could tell it are long since gone. Fertilizer production at Deer Park began as early as 1874. Ruins of 19th century structures can be seen from the western ring road.

By the 1930s, the site was a major centre for the production of explosives such as ammonium nitrate and nitro-glycerine. Water-based explosives, explosive cords and detonators are still produced at Deer Park today, along with fabrics and plastics. Nitro-glycerine production ceased in 1982. ICI's Deer Park plant suffered one major ammonium nitrate explosion in 1952.

Deer Park was the centre for a major operation in the production of explosives and fertilizers, including storage facilities south of the present plant and trans-shipment facilities further from Melbourne at Ravenhall. In the 1960s operations were largely mechanized. Broad-gauge sidings from the Ballarat line at Ardeer linked Deer Park with other related facilities elsewhere, such as the ADI (Australian Defence Industries) munitions plant at Mulwala, on the NSW border, an ICI site at Tocumwal, and an explosives storage facility at Altona, which was also connected to the broad gauge rail network via tramway. Explosives transportation was shifted from rail to road in 1986.

What of the tramways? The extensive network inspected by the Railtrails group probably had a total length of about 3 km, though this was difficult to estimate as there were 'orphaned' sections of unused track. The last scheduled operations on the network took place in Christmas week 2003, then silence settled over the narrow rails, locosheds and explosives loading facilities. Haulage in the early days was by man-power and horses, but battery powered locomotives operated on the system for many years. At its peak, there were reportedly about 20 loco-type motive units, though many of these were for road rather than rail use. At the time of our inspection there were just two battery electric locomotives built by Greenwood & Batley in 1974, which replaced two earlier locos of a similar type. There were also several battery-powered road vehicles of similar size and construction for use within the plant, with rubber wheels. Some explosives trucks had enclosed metal bodies, but the majority were open trolleys with timber decking and frames.

A battery-electric locomotive and train, photographed from the blast wall of Bunker G102. Note the tiny turn-table just in front of the loco. The pylons near the road crossing formerly supported steam pipes from the power plant. *Photo: Ray Peace*

Travelling around Orica's Deer Park plant had slightly spooky elements. Electric lights were mounted on the outside of buildings, lest an exploding bulb trigger an explosion. Three tiny turntables barely two metres in diameter survived, though in former years there were more. Point arrangements were simple and showed no manufacturer's imprint; some appeared to be hand-welded. Track arrangements, however, were quite complex, such as that around Building G102, which our group visited. Overhead mountings for steam pipes from a former steam plant at the north-east corner of the facility could still be seen. Cinders and slag from the steam plant were used to build roads and the track-bed formations around the plant.

What could be done with the tramway network that would not involve its destruction? A tourist facility? Robert Taylor laughed. The public liability issues because of possible residues and other still active sections of the plant appear to render such options impossible. The fate of the rolling stock and the rails are a public liability tin of worms. Because of possible explosives residue contamination, the two battery locomotives and several dozen open trolleys will be burned, then the remains sold for scrap. The kilometres of rails may end up with a light rail society, but are they to be allowed in to collect them, or will they be dumped, to be salvaged later? Their final fate is currently unknown.

Rehabilitation of the site poses similar problems. A 300 metre buffer zone against accidental explosions is needed, and with possible explosives residues and other hazardous substances such as asbestos in the ground, housing or recreational use is highly unlikely.

Few industrial tramway facilities in Australia survived into the 21st century in running order. The last outsiders to see the rail complex at Orica's Deer Park plant were the bulldozer drivers who tore it all up. Our group was privileged to see one of Australia's least known tramway networks in working condition inside a complex to which visitors are rarely allowed access.

1937) was still in pieces at Port Kembla in February and its future running is said to be in doubt. It has been reported that the Ministry of Transport forced the cancellation of eight runs that were planned for December 2003 and that they have also questioned the accreditation of workers performing the repairs.
Chris M 2/04; Chris Walters 2/04; John Garaty 2/04; Chris Stratton 2/04

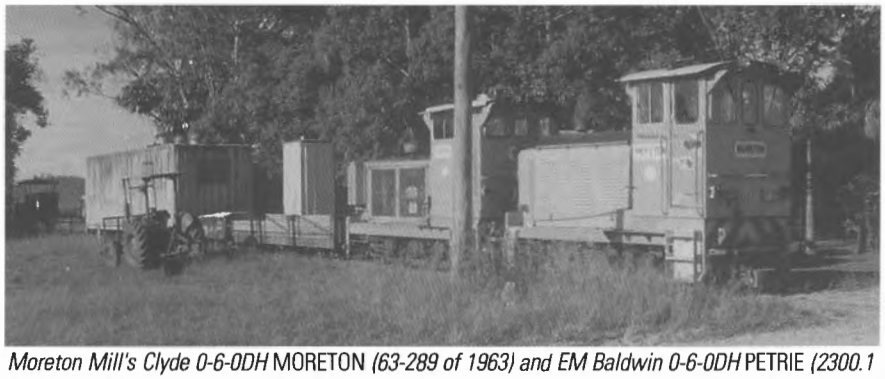
A.GONINAN LTD, Broadmeadow
(see LR 175 p.18)
1435mm gauge
The 'Trackmobile' shown in LR 175 is the larger of the two units at Broadmeadow. It carries the numerals 75 to celebrate the 75th anniversary of a major milestone in the company's history. The smaller 'Trackmobile' at Broadmeadow came from Goninan's Lansdowne Engineering plant near Taree after it was closed. It was certainly at Broadmeadow by mid to late1997.
The diesel-electric Coles rail crane has been at Broadmeadow for some time (quite possibly from new). It was used as a yard crane when Goninans was more of a general engineering works. With the down turn of this work it was also used increasingly as a shunting tractor, as the larger 'Trackmobile' had difficulty shunting a 4-car Tangara set across Broadmeadow Road. After it was no longer used as a crane for a long period of time the jib was removed, sometime in the late 1990s.
Jeff Mullier 2/04

DENILIQUIN ASSOCIATED GRAIN STORAGE PTY LTD
1500mm gauge
This plant, on the former Victorian Railways network, operates leased 4wDM RT46 (Aresco Trak Chief, 1966) painted in a blue livery. This unique locomotive was originally purchased by Victorian Railways for use shunting briquette trains at Morwell. It seems likely that its current owner is El Zorro Generating Solutions of Melbourne. Also based at Deniliquin for a period of time from 2000 to January 2004 was RT35 (VR Newport, 1963), recently replaced by RT32 (VR Newport, 1962). These are of the familiar 4wDM VR-built RT type, and are in Vicrail livery. They were previously noted with Freight Australia and Specialized Container Transport respectively, but their present ownership does not appear to be clear.
Chris Stratton 1/04; Brad Coulter 1/04; Dougie Williams 1/04; Peter Knife 1/04; Tony Burgess 1/04; Chris Walters 1/04; Peter Medlin 2/04; *MotivePOWER* 2/04

QUEENSLAND

BUNDABERG SUGAR LTD, Moreton Mill
(see LR 175 p.19)
610mm gauge
Friday 19 December 2003 saw the last movement for the year over the tramway system. EM Baldwin 0-6-0DH *PETRIE* (2300.1 6.68 of 1968) towed EM Baldwin 0-4-0DH *MAROOCHY* (6/1064.1 11.64 of 1964) back to the mill from Jamaica for storage over Christmas. Every other year the work train, including Malcolm Moore 4wDM *JIMPY* (1051 of 1943), had been brought back to the mill for Christmas, but on this occasion it was left out in the fields at Rickard Siding.
The work train returned to the northern extremity of the system on 12 January accompanied by *PETRIE* and Clyde 0-6-0DH *MORETON* (63-289 of 1963). By late January, all track north of the Yandina Creek crossing, consisting of main line and the Benfer branch, had been removed.
No further locomotives had been transferred from the mill by late January. It is suggested that most of the 4 ton cane bins suitable for reuse will be going to Mourilyan mill. There is also a suggestion that outmoded bins from Mourilyan may come to Nambour for possible use transporting cane to the proposed dried animal feed plant to be established near Bli Bli, indicating that some portion of the tramway may remain in use.
Meanwhile some Maroochy Shire Councillors are hoping that a tourist tramway between the beach and hinterland will be able to be retained using preserved locomotives and rolling stock.
Carl Millington 1/04; Shane Ferris 1/04; *Nambour & District News* 1/04

MOSSMAN CENTRAL MILL CO LTD
(see LR 170 p.21)
610mm gauge
Faced with the prospect of immediate mill closure, 93% of coastal and Julatten growers agreed just before Christmas to give up $1.60 per tonne of cane in the 2004 season. This measure provides an extra $900 000 of funds to the mill, saving it from bankruptcy, but unless returns improve, the future looks bleak.
Port Douglas & Mossman Gazette 15/1/2004 via Corey S



Moreton Mill's Clyde 0-6-0DH MORETON *(63-289 of 1963) and EM Baldwin 0-6-0DH* PETRIE *(2300.1 6.68 of 1968) at the head of the demolition train at Yandina Creek on 23 January 2004. Malcolm Moore 4wDM* JIMPY *(1051 of 1943) is at the rear.* *Photo: Carl Millington*

Industrial Railway NEWS

SMORGON STEEL, Acacia Ridge
(see LR 175 p.22)
1435mm gauge
Goninan 4wDE 030 of 1972 was reported in January still painted yellow with red buffers, although the red lining has gone. It was expected that the buffers might be removed when it is finally commissioned.
Russell Watkins 1/04

TULLY SUGAR LTD
(see LR 172 p.22)
610mm gauge
The remains of Walkers B-B DH DH36 (618 of 1969) were noted passing on road transport through Townsville on 14 February, presumably for storage at the mill. The bogies appeared to be missing, and the cab has been partially removed. This locomotive was previously owned by Cooks Construction and had been stored for some years at the Moonaboola Industrial Estate, Maryborough. Meanwhile the former DH56, Walkers B-B DH CC03 (643 of 1970), also ex Cooks Construction, was also noted passing through Townsville on 25 February. It also had been stored at Maryborough and likewise appears to be without bogies.
Peter Murray 2/04; Carl Millington 2/04

VICTORIA

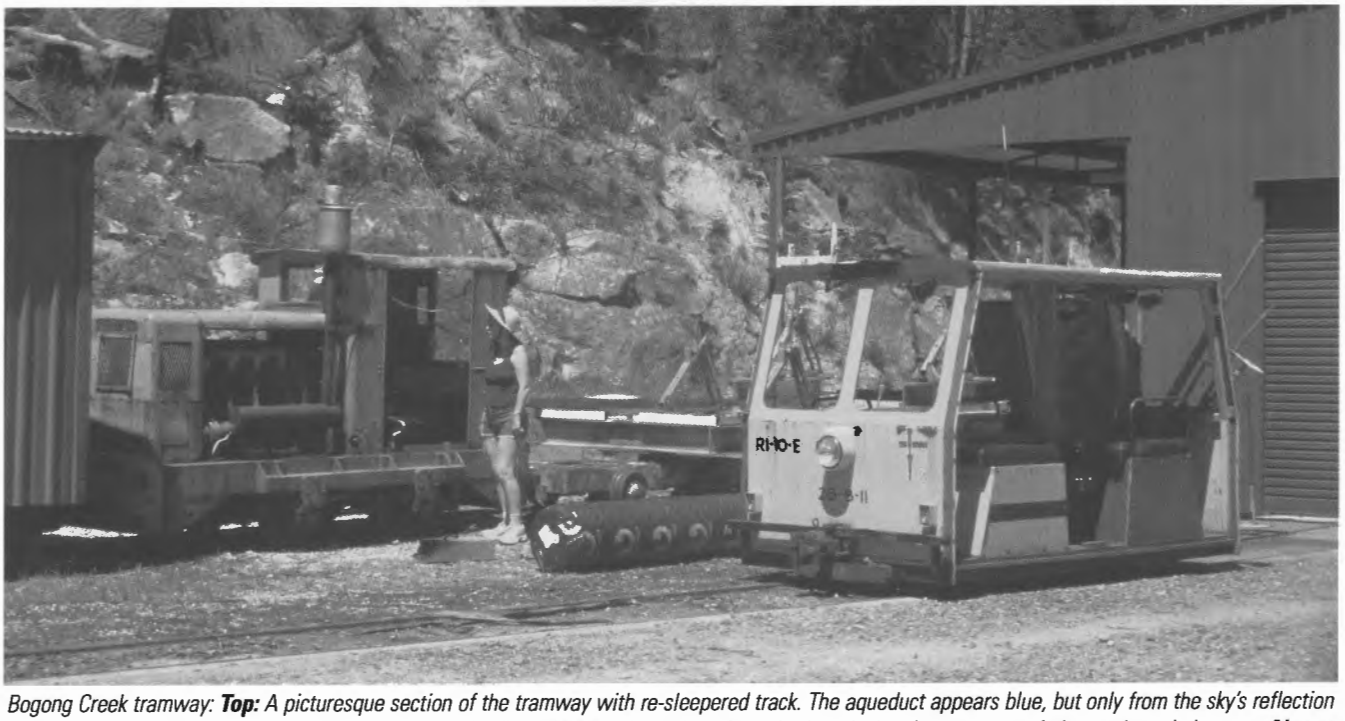
SOUTHERN HYDRO PARTNERSHIP, Bogong Creek raceline tramway, via Mount Beauty
914mm gauge
(see LR 171 p.21)
Some eight or so kilometres south-east of Mount Beauty township, at an elevation of about 560 metres, is the Clover Power Station, one of three in the Kiewa hydro-electricity scheme. It has the smallest output of the three and is the oldest, having become operational during the Second World War.
To augment the waters of the East Kiewa River, which supply Clover from Lake Guy, the Bogong Creek is tapped some three kilometres above its junction with the East Kiewa and routed via a nine-kilometre-long raceline which came into operation in late 1952. Running parallel with this aqueduct for most of its length is a 3ft gauge tramway, originally utilised for the construction of the raceline, and now functioning for inspection and repair purposes.
As detailed in LR 171, many kilometres of this tramway were burnt in January 2003 when the Victorian High Country bushfires swept towards Mount Beauty township, and the worst was feared for the tramway's future. On 17 December 2003 a visit was made to the tramway and - pleasing to note - extensive repair work wass being carried out. On a very warm day your scribe walked (hobbled actually, due to a crook back!) out to the first siding, just

over a kilometre. In that length alone, over 750 new steel sleepers have been laid and the burnt wooden ones tossed aside. The new sleepers are branded 'Traklok' and all are stamped '25/3/03'; Southern Hydro must have made a fairly prompt decision to rebuild. Maintenance-free Traklok rail clips are used instead of dogspikes. The overall impression is that the rebuilt tramway would seem to have a long life in front of it.

New ballast has been applied in various places, and a large heap is at the terminus awaiting distribution, together with several hundred more steel sleepers in bundles of fifteen. Judging from the pre-punched holes it appears that they may be 610mm gauge sleepers re-punched to suit 914mm. In several places steel sleepers have been used longitudinally beneath the track as packing to achieve the correct levels. They also make good retaining walls when embedded vertically into the ground. Very few wooden sleepers remain, but in a couple of places wooden, concrete, and steel sleepers may be found juxtaposed.

About a hundred metres from the new green shed at the terminus, the hillside above the raceline has slipped and, although now cleared, the large raw gash in the hillside indicates that the landslide must have buried both the raceline and tramway. New steel sleepers and ballast had already been laid on this section and the tramway, though now cleared, is covered up to rail level.

Approximately 600 metres from the terminus is the first bridge (about 16 metres long and four



Bogong Creek tramway: ***Top:*** *A picturesque section of the tramway with re-sleepered track. The aqueduct appears blue, but only from the sky's reflection as the water is still very dirty, eleven months after the fires.* ***Centre:*** *A section of repaired track showing concrete, timber and steel sleepers.* ***Above:*** *Bogong Creek tramway slumbers in the midday sun as Christine Rickard inspects Ruston & Hornsby 4wDM 296070 of 1950 . The 'Maximove' 4wBE inspection railcar is on the right. 17 Dec 2003. Photos: Phil Rickard*

metres high) which seems to have been subject to some repairs. The burnt workers' carriage, two Hudson tippers (see picture in LR171) and some burnt truck frames have been brought back to the terminus whilst the two water tank cars and a burnt truck frame remain at the first siding. The raceline is flowing although the water is very dirty with a lot a debris and silt evident.

Outside the shed at the terminus was the works train comprising Ruston & Hornsby 4wDM 296070 of 1950 (when was it repainted from orange to yellow?) coupled to the "garden shed" carriage and flat trucks, and the 4wBE "Maximove" inspection railcar. In contrast to the LRRSA visits in the late 1980's, the Maximove now has automatic couplers and is fully "air-conditioned" – all windows have been removed! Whilst this may be satisfactory in summer I'm not sure it would be the vehicle of choice when the winter snows arrive.

Both the Ruston and the Maximove are undamaged by the fires, in contrast to the surrounding hillsides, where the regrowth is evident everywhere and makes for interesting photography as nature repairs itself.

Phil Rickard 12/03

WESTERN AUSTRALIA

BHP BILLITON

(see LR 175 p.22)

1435mm gauge

A further consignment of second-hand GM EMD Co-Co DE locomotives from General Electric Transportation Systems arrived in port on 28 December 2003. They were numbered GECX 6407, 6417, 6419 and 6421. Of the previous batch, GECX 6401 has been renumbered 3078 and 6419 renumbered 3079.

Richard Montgomery 1/04; *MotivePOWER* 2/04

KALGOORLIE CONSOLIDATED GOLD MINES PTY LTD

narrow gauge

(se LRN 113 p.22)

The Chaffers headframe was removed in February to make way for the expanding super pit open cut. It closed the entrance to the Golden Mile's underground workings and ended more than 100 years of underground mining and access. At level 20, 666 metres beneath the surface, twice as deep as the Super Pit, ran a rail line built by KCGM when it consolidated the works. Known as the "subway", it was operated with battery locomotives and was used for ore and miner transport. It linked the Lake View, Perseverance, North and South Kalgurli, and other lesser known shafts. The original Chaffers shaft was sunk in about 1897. The 1959 head-frame will be re-erected locally at the Australian Prospectors and Miners Hall of Fame.

Kalgoorlie Miner 17/1/04 via David Whiteford; http://www1.superpit.com.au

PILBARA RAIL

(see LR 174 p.22)

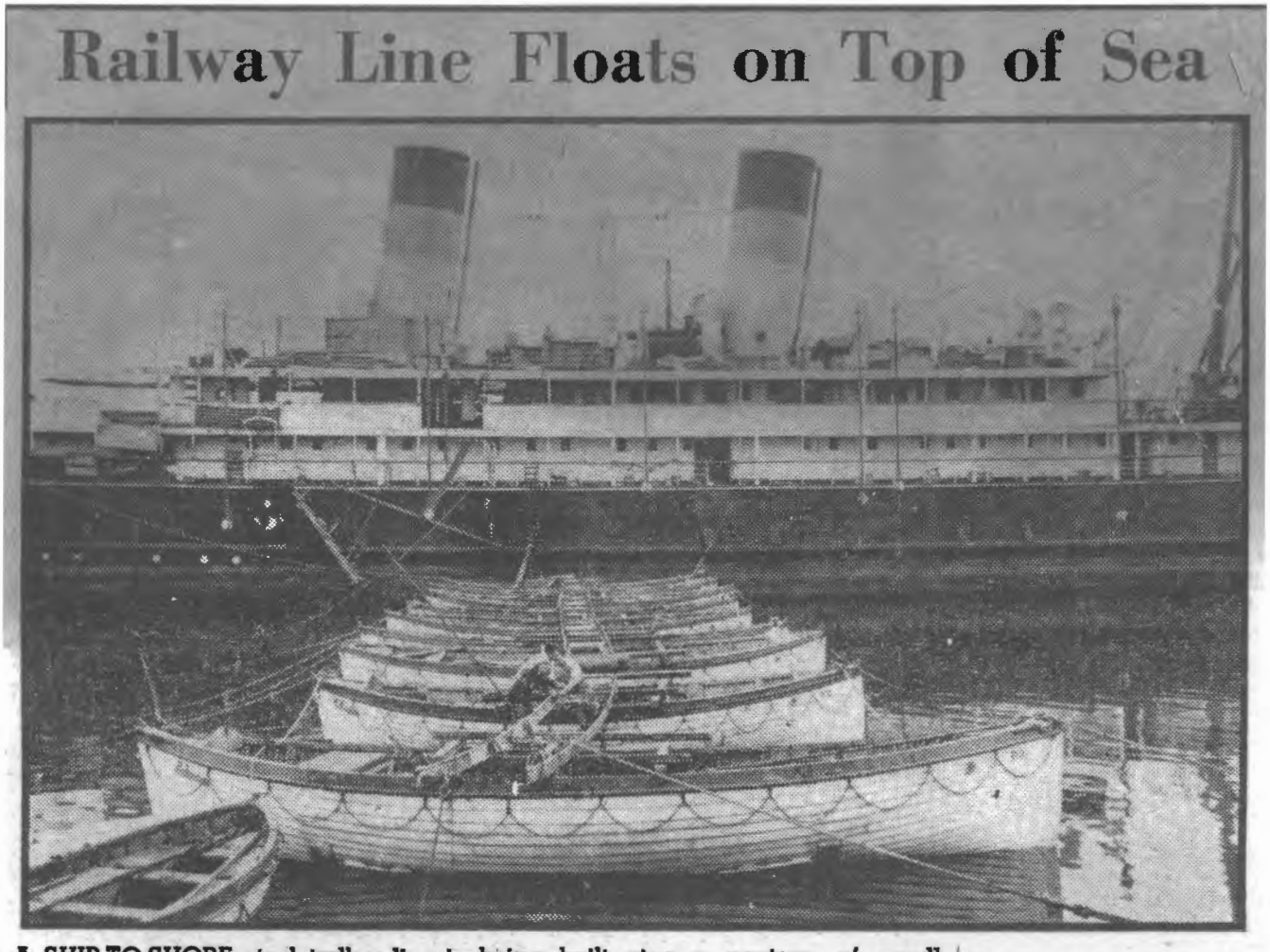
1435mm gauge

Four ex Robe Co-Co DE locomotives stored at Cape Lambert have been advertised for sale by expressions of interest by auctioneers Smith Broughton & Sons. The locomotives in question are:

9412	Goodwin	G-6060-03	1971
9413	Goodwin	G-6060-04	1971
9415	Com-Eng	G-6060-06	1973
9416	Goodwin	G-6046-16	1973

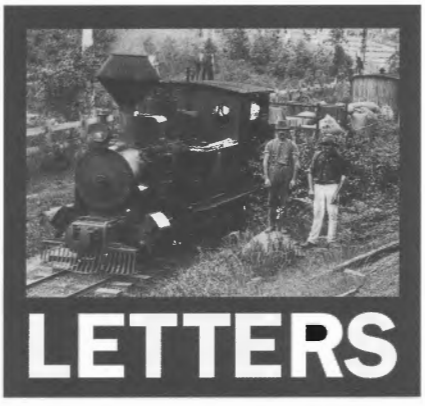
www.smithbroughton.com 1/04

FROM THE ARCHIVES



A SHIP-TO-SHORE steel trolley line is being built atop a pontoon of small boats out to the grounded Nairana, near Princes Pier. The trolley line over the sea will be used to carry away dismantled parts of the vessel.

From The Age, *Melbourne, Saturday June 23, 1951. Submitted by Norm Houghton.*



LETTERS

Dear Sir,

A Journey to Beech Forest (LR 174)

A few small errors crept into Ron Preston's very interesting article 'A journey to Beech Forest' in the December 2003 issue of *Light Railways*.

On page 3, in column 2, paragraph 3, line 7, '1908' should read '1910'.

On the main map on page 4, 'Lowat' should read 'Lovat'.

In the lower photo caption on page 8, the facts appear to have become somewhat scrambled. The extension to Crowes was closed beyond Ferguson in 1954. The short section from Ferguson to Weeaproinah was re-opened in 1955.

Hugo van den Berghe
Abbotsford, Vic

Dear Sir,

Mystery Locomotive at Apollo Bay

Recently I was looking through some Colac Shire Council records from the 1880s and 1890s and came across references to a locomotive being at Apollo Bay in or around the period late 1885 to late 1886.

The locomotive was described as being a light one and it was intended to be used on the Barham River Timber Co tramway. This tram was of 3ft 6ins gauge. The company principal, Henry Costin, was the driving force behind the lavishness of the plant and equipment, and he bought the latest American sawing machinery and introduced the locomotive. Shipping infrastructure at Apollo Bay was then poorly developed and there was no capacity for large steamers to tie up at the rickety jetty, nor was there a crane provided. The locomotive, or its broken down parts, would have needed to be light enough for the ship's tackle to lower it over the side to a waiting barge, and light enough to be man-handled off at the shore end.

The company's tramway was laid from the latter part of 1885 through to April 1886 but was not used until about September 1888 and then only for a few months. The company had a troubled existence and to the Apollo Bay locals the tramway was nothing but a nuisance as it hindered road and horse traffic on account of its construction methods (principal and stringer) and it taking up the better part of the road and river margin reserves it appropriated for the route.

Costin drowned while unloading some of the mill machinery from a ship in Apollo Bay harbour in May 1886 and the entire scheme lost momentum after this. The remaining company principals spent months looking for a new backer, and it appears that during this period the grand plans were scaled back and the locomotive and some other plant were removed from Apollo Bay.

The Barham River Timber Co sawmill operated for only a few months in 1888 and the plant and tram was then put under a caretaker. The mill machinery was sold in 1890 and parts of it were re-used in other Otway mills. The tramway was left intact and under caretaker conditions for a while in the hope that the timber resource might be reactivated, but this did not eventuate. The iron rails in the tram were salvaged in 1897 and stacked near the jetty, where they remained and were noted in 1899 as being an obstruction to normal operations on the Apollo Bay waterfront. The sources do not mention the later fate of the rails.

The Victorian Municipal Directory for the period mentions that a steam tramway was in operation at Apollo Bay but the writer's view is that this is journalistic puff for what might have been. There is no surviving folk memory at Apollo Bay for the locomotive tram.

Norm Houghton
Geelong, Vic

Dear Sir,

Fireless Locomotives (LR 174)

Regarding the item in the Research section of your December 2003 issue, asking about the use of 'fireless cookers' (fireless locomotives) in Australia; I do not know of any, but would be interested to know if we had any compressed air locomotives. Similar to the fireless locomotives, these ran on compressed air, and operated in areas where the use of a firebox was not practical for safety reasons.

I raise the question because, prior to World War Two, these machines were advertised here in Australia. A German firm, Demag Engineering of Duisburg, had a trade magazine, *Demag News*, printed in English, which was circulated here in Australia. One issue, circa 1938, was devoted to their compressed air locomotives.

At the time, I was the office junior at the State Department of Factories and Steam Boilers, which was on Demag's mailing list and, finding the subject interesting, I wrote to Germany requesting photographs. I eventually received three photos, showing different types of compressed air locos; one being a typical publicity shot with the background removed, and the other two of locomotives working underground.

Later, during the war, while I was serving with the 2nd AIF, the Army became interested in my 'unusual' interest in trains. I was asked by my Commanding Officer to produce proof that I had been interested prior to the outbreak of hostilities. To fulfil this requirement, I showed the CO, among other things, several pre-war photographs, including those from Demag. When he discovered that they had come from Germany he became quite agitated and I think he might have suspected I was 'Schmit the Spy'.

Fortunately, good sense prevailed and, after some fast talking, I was able to keep both my job and the photographs.

I never found out if Demag's pre-war publicity resulted in any sales of their unusual machines to Australia.

Arnold Lockyer
Dover Gardens, SA

A 40HP 0-4-0 compressed air locomotive built by Demag Engineering of Duisburg, Germany, at work in an underground coal mine. Classified as their Type DL 40/30, it featured a tractive effort of 750kg and driving controls at both ends. *Photo: AD Lockyer Collection*

VALE CRAIG WILSON

1-5-1952 to 28-1-2004

Craig was born in Melbourne but was raised in Brisbane until moving to Sydney in his early teens where his interest in railways was fostered while attending Barker College at Hornsby. Craig developed an early interest in industrial railways joining the LRRSA around 1972 (as member 672) which led to a lifelong involvement. When the New South Wales Division was formed in 1976 he was a foundation member. Craig was elected to the NSW Division Committee in 1981 and became Secretary in 1982, holding that honorary position continuously for 21 years until his deteriorating health forced him to resign last year.

As an Accountant his business and administration skills were well suited for the position, admirably guiding the committee. He gave his time freely in organising meetings, and promotional displays to encourage interest in light railway research as well as editing the NSW Division's periodical 'Research Bulletin'. Craig's talks at meeting were always well researched and informative and he was particularly active in organising outings for LRRSA members to various industrial sites and more recently conducted informal tours to coal mining and tunnelling sites for his friends.

He actively helped and encouraged other researchers. Many of his photographs appear in various books and periodicals by other authors and he contributed articles and information to *Light Railways* and *LRN*.

His passion for E.M. Baldwin & Sons of Castle Hill, NSW, was well known and after 25 years of research culminated in his book *Built by Baldwin*, covering the history of this family business. The Baldwin family should be honoured that an outsider would take so much interest and time to record the social and industrial history of the family for posterity. Craig would have been touched to find that Frank and Maurice Baldwin attended his funeral to pay their last respects.

Although he was an accountant by profession, he exhibited an amazing aptitude for all things engineering and was keen to learn about how the equipment he was researching actually worked. He could easily hold a conversation with any engineer and not be dismissed as yet 'another bean counter'. His accounting background allowed him to assess for himself how the organizations he researched actually performed as a business, a point usually lost to the purely technically minded.

Craig always described himself as a 'narrative historian' and a serious industrial researcher. He held those who he did not consider to do the hard yards in their research as 'light weights'. His book *Built by Baldwin* exhibits both his narrative style and a desire to jump in and get his hands dirty. In many ways this book is a benchmark in the area of engineering company histories and compares well with the many books that have been written on the larger British locomotive builders.

No one was happier than Craig to be dressed in his favourite old green King Gee shirt, jeans and a hard hat, grubbing around in a coal mine half a mile underground. Here he would photograph and record the men, the machines and the operations of his beloved coal industry. Having said this he also had a keen interest in the railway operations of the sugar, steel, tunnelling and hard rock mining industries.

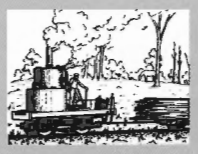
Similarly he would search out ex-employees from such organisations and meticulously record their recollections of their working life. This material he would use in his articles to verify the data he had collected and to record the human aspects of any operation.

Like all serious researchers, Craig collected a considerable amount of material, with boxes of saved documents, numerous filing cabinets full of his research material and photographic collection. To give Craig his due he had diligently catalogued and listed all the information and photographs he collected, placing it on a computer package for easy access, a point we could all take a lead from. His collection was so well organised it has been accepted for preservation by the Mitchell Library in Sydney.

Researcher to the last, Craig was determined to ensure that significant portions of his research were written up, using the final months of his life to finish off nine articles for *Light Railways*, on underground rail equipment used in NSW coal mines and on the continued involvement of the Baldwin brothers in manufacturing rail equipment, thus completing the final chapters to the Baldwin Saga. On the Saturday before his death he conducted two telephone interviews, one to Brisbane and a two hour interview to Richmond as he considered the information too valuable not to record. Now sadly the historian has now become part of history. He will be sadly missed by us all, both for his friendship and for his contribution to the field of industrial railway research in Australia.

Craig succumbed to his long battle with cancer on 28th January 2004 and is survived by his wife Pam and daughters Kate and Ann.

David Jehan and Jeff Moonie



LRRSA NEWS

MEETINGS

ADELAIDE: "Alice Springs to Darwin"
There will be a revue of videos, taken by LRRSA members, of the first freight and passenger trains to travel over the new railway from Alice Springs to Darwin. Not exactly 'light railways', but a momentous event of interest to all rail enthusiasts, particularly in SA and NT.
Location: 150 First Avenue, Royston Park.
Date: Thursday 1 April at 8.00pm. Contact Arnold Lockyer (08) 8296 9488

BRISBANE: "Queensland Cane Railways"
Tom Badger will be presenting film and video footage of cane railway operations in Queensland.
Location: BCC Library, Garden City Shopping Centre, Mount Gravatt. After hours entrance (rear of library) opposite Mega Theatre complex, next to Toys'R'Us.
Date: Friday 2 April at 7.30 pm. Entry from 7 pm. Contact Bob Oow (07) 3375 1475

HOBART: "Krauss Locomotives in Tasmania"
Krauss locomotives were widely used in Tasmania, and on many remote and interesting tramways. Wayne Chynoweth has made a study of their history and will present his findings at this meeting.
Location: Transport Museum, Anfield St. Glenorchy
Date: Friday 23 April 2004 at 7.00 pm

MELBOURNE: "Restoration of G42"
After over 41 years, Beyer Garratt G42 is moving under its own steam again! Alan Gardner (the Puffing Billy Railway's Workshops Manager) will present an item on this mammoth restoration project.
Location: Ashburton Uniting Church Hall, Ashburn Grove, Ashburton.
Date: Thursday 8 April at 8.00 pm

SYDNEY: "The Parramatta Wharf Tramway"
Trevor Edmonds will be talking about the 'Parramatta Wharf Tramway'. This steam tramway ran from Redbank Wharf to Parramatta Park Gates and shunted local industries, like Meggits Linseed Mill, with steam tram motors.
Location: Woodstock Community Centre, Church Street, Burwood, (five minutes walk from Burwood railway station).
Date: Wednesday 27 April at 7.30pm.

A selection of books from the LRRSA Sales Department ...

Built by Baldwin
The Story of E. M. Baldwin & Sons, Castle Hill, NSW - by Craig Wilson
The history of Australia's most successful and innovative builder of industrial diesel locomotives. E. M. Baldwin developed the B-B DH locomotive now widely used on Queensland's sugar railways, 160 pages, A4 size, 148 photos, 16 diagrams, construction listing.
$44.00 Hard cover (LRRSA members $33.00) Weight 1000 gm.

The Aramac Tramway
By Peter Bell & John Kerr
The history of the 41 mile long 3 ft 6 in gauge Aramac Tramway, almost in the centre of Queensland. Built in 1913, it operated for 62 years, providing the Shire Council a major challenge to keep it going.
48 pages, A4 size, 49 photos, 5 maps and plans, references, bibliography and index.
$15.00 Soft cover (LRRSA members $11.25) Weight 350 gm.

Focus on Victoriaís Narrow Gauge Beech Forest Line Part 1
Photographs by Edward A.Downs, published by Puffing Billy Preservation Society. Very high-quality landscape format book of duotone photographs dating from 1930s, but mostly from the 1940s. 48 pages, soft cover, A4 size.
$35.95 (LRRSA members $32.35) Weight 280 gm

Echoes through the Tall Timber
The Life and Times of a Steam Man 1895-1984
by Dorothy Owen, published by Brunel Gooch Publications. Life story of Harry Matheson, who drove logging winches, and mill engines in the Warburton-Powelltown area. 176 pages, soft cover, A5 size, 48 illustrations.
$22.95 (LRRSA members $20.66) Weight 375 gm

Focus on Victoriaís Narrow Gauge Gembrook Line Part 1
Photographs by Edward A.Downs, published by Puffing Billy Preservation Society. Very high-quality landscape format book of duotone photographs from the mid-1930s to the mid 1940s. 48 pages, soft cover, A4 size.
$35.95 (LRRSA members $32.35) Weight 280 gm

Powelltown
A History of its Timber Mills and Tramways
by Frank Stamford, Ted Stuckey, and Geoff Maynard. 150 pages, soft cover, A4 size, 150 photographs, 22 maps and diagrams, references and index.
$22.00 (LRRSA members $16.50) Weight 550 gm.

The Innisfail Tramway
The History and Development of the Geraldton Shire Tramway and the Mourilyan Harbour Tramway
by John Armstrong & G.H. Verhoeven. 128 pages, A4 size, 99 photos, 22 maps/diagrams.
$37.90 Hard cover (LRRSA members $28.43) Weight 650 gm.
$29.95 Soft cover (LRRSA members $22.46) Weight 470 gm.

Modernising Underground Coal Haulage
BHP Newcastle Collieries' Electric Railways
by Ross Mainwaring. 60 pages, soft cover, A4 size, 18 photographs, 13 maps and diagrams, references and index.
$16.50 (LRRSA members $12.38) Weight 230 gm.

Laheysí Canungra Tramway
by Robert K. Morgan, revised by Frank Stamford Describes Queensland's largest timber tramway. 32 pages plus soft cover, A4 size, 28 photographs, plus maps/diagrams and index.
$9.95 (LRRSA members $7.46) Weight 220 gm.

Mountains of Ash
A History of the Sawmills and Tramways of Warburton - by Mike McCarthy
Describes a network of over 320 km of tramways which linked 66 major mills to the Warburton railway. 320 pages, A4 size, 280 photos, (incl. 52 duotones), 50 maps/diagrams, (incl. 14 four-colour maps).
$59.95 Hard cover (LRRSA members $44.96) Weight 1500 gm.

Settlers and Sawmillers
A History of West Gippsland Tramways and the Industries they Served 1875-1934
by Mike McCarthy
168 pages, soft cover, A4 size, 96 photographs, 17 maps and diagrams, 6 graphs, one loco diagram, references and index.
$31.90 (LRRSA members $23.93) Weight 700 gm.

Bellbrakes, Bullocks & Bushmen
A Sawmilling and Tramway History of Gembrook 1885-1985 - by Mike McCarthy
104 pages, soft cover, A4 size, 71 photographs, 17 maps and diagrams, references and index.
$26.00 (LRRSA members $19.50). Weight 500 gm.

John Moffat of Irvinebank
A Biography of a Regional Enrepreneur, by Ruth Kerr
Published by J.D. & R.S. Kerr
296 pages, 243 mm x 172 mm, 3 maps, 47 photographs, references, bibliography and index.
Not a railway history, but a history of an Australian mining magnate who was very much involved with associated railways and tramways in North Queensland. He was seen as a "monument to honesty".
$45.00 hard cover (LRRSA members $40.50) Weight 950 gm
$30.00 soft cover (LRRSA members $27.00) Weight 820 gm

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Heritage &Tourist

Railway Heritage in Australia

We enter the New Year with new hopes that the insurance crisis experienced by Australian railway preservation groups over the past two years is now behind us. The upheavals of the insurance industry are subsiding and competition is returning to the field of public liability, while the move by Queensland groups to establish the Association of Tourist Railways Queensland (ATRQ) is now yielding results. In January the ATRQ reported that it was negotiating with two underwriters for umbrella public liability insurance cover for members and, through cooperation with other Australian States, there were prospects of an Australian-wide cover for preservation groups. By February, a provisional deadline of June 2004 was being pursued for an agreement of group cover based on the actual risks rather than a blanket 'one premium suits all'.

A key issue to emerge from these negotiations is that cost effective, reasonable excess insurance cover for railway preservation groups will be on dependent proper risk management processes, with consideration of passengers carried and kilometres travelled. Pressure for improved risk management is also coming from the National Rail Reform process, with the final draft of the National Health Assessment and Certification Standards having been recently sent out to every accredited railway in Australia. State transport authorities will uphold these standards and each accredited railway will have to have it as a part of their safety management system, with every railway operator having to abide by the standards.

This new rail safety environment places onerous responsibilities on preservation railways, particularly those 'little railways' that rely on volunteers to operate on an intermittent basis. It is likely that a number of existing preservation groups will find the accreditation standards too daunting and they will be forced to cease public train operations.

With these changes come new challenges and opportunities. In recent years I have had the opportunity to visit a wide range of preservations railways and museums around the world. One lesson that stands out is that the preoccupation with 'running trains' that dominates Australian preservation groups has seriously hindered the interpretation of 'The Story'. That story might relate to the impact of the railway on a community or region, the railway men and women responsible for its operation or the industry that it served, but the problem is that it is not being told in an interesting way that attracts visitors to the facility. My recent international experiences have covered a number of railway and industrial museums that do tell the story in an exciting way and attract large numbers of visitors.

Because preservation groups that relate to light railways are, in most instances, dealing with industrial railway applications, they have the opportunity to interpret the story of that industry and its associated railways in an exciting and innovative manner, thereby creating a major tourist attraction. Perhaps the challenges currently facing the operators of preserved railways will open the way for exciting new developments in the interpretation of our railway heritage?

Bob McKillop

News items should be sent to the Editor, Bob McKillop, Facsimile (02) 9958 8687 or by mail to PO Box 674, St Ives NSW 2075.
Email address for H&T reports is: rfmckillop@bigpond.com
Digital photographs for possible inclusion in *Light Railways* should be sent direct to Bruce Belbin at: boxcargraphics@optusnet.com.au

NEWS

Queensland

BLACKWATER TOURIST TRAIN

458mm gauge

Rotary Club of Blackwater

This operation, last reported in LRN 82 back in 1991, operated as a community service. It has continued using the Jenbach JW8 4wDM (B/N 196 of 1952) and up to 10 passenger cars until recent times, but problems with a slipping gearbox have recently resulted in its withdrawal. The Club is appealing for technical advice and parts to effect repairs.

Shannon Belette, via John Browning, 2/04

BUDERIM-PALMWOODS HISTORIC WALKING TRAIL

The Buderim-Palmwoods Heritage Tramway Inc. has recently prepared a pamphlet describing the points of historical interest along the Buderim Village section of the former Buderim to Palmwoods tramway (see LR). It describes where the former infrastructure was located in relation to today's landmarks and highlights remnants, such as cuttings, sections of formation and lines of pine trees, of the former line. The Pioneer Cottage and Museum, which has artefacts from the tramway on display, is on the trail.

Bob Dow, 2/04

MOSSMAN MILL MUSEUM

This museum, developed by Wally Gray, tells the story of Mossman Central Sugar Mill and how the people of the district lived their lives. It is housed in the original cookhouse for the mill, incorporating a dining room and workers' quarters. " In 1979, the cook house was converted to a railway station and then used for the tourist line to Drumsara and Port Douglas in 1982. The current museum was rejuvenated in 2000.

Wally Gray has made a concerted effort to source photos covering 107 years of history in the entire Douglas Shire, including north of the Daintree River, covering such topics as transport, tourism, natural disasters and local fauna. The museum houses several artefacts from the 105 year-old-mill which was built in Glasgow in 1895 and transported by ship to the Coral Sea where it was unloaded at the Mossman wharf at Thooleer and erected in 1897. The Mossman Mill Museum is open from 8am to 5pm, Monday to Friday, and sells souvenirs, sugar gift packs and bulk sugar as well. Entry is $10 and includes a video presentation and tour of the mill.

Port Douglas & Mossman Gazette, 12 April 2003, via John Browning

ROCKY POINT SUGAR MILL, Woongoolba

610mm gauge

The tramway system at this southern Queensland mill and its diminutive 0-4-0WT locomotive (John Fowler 16249 of 1923) was covered in LR 92 back in April 1986 (pp. 4-16). Following static display at Dreamworld for some years, the locomotive was transported back to its home at Rocky Point Mill on 4 December 2002 (LR 170, p.27). It was reported that Bill Heck, the owner of the Rocky Point mill, intended to rebuild the locomotive for use on a tourist line at the mill. A visit to the mill in January 2004 found the locomotive and two carriages in a partially restored state.

Peter Jones, 2/04

New South Wales

CAMPBELLTOWN STEAM MUSEUM

610mm gauge

Two vintage diesel locomotives arrived at the Museum in the latter part of 2003. Ex-Maritime Services Board Motor Rail "Simplex" 4wDM MSB No.2 (20560 of 1955) arrived from Panania on 12 October. Bennie Rachwel's ex Plane Creek Mill John Fowler 0-4-0DH 18801 of 1930 arrived on 17 October, together with a small four-wheeled brake van numbered C3.

Ray Graf 2/04

MILLENNIUM PARKLAND RAILWAY

610mm gauge

A public open day on Sunday 15 February attracted good crowds. Gemco 4wBE locomotives LP01, LP03 and LP04 (see LR 172, p.28) hauled the trains on the day. Initially LP03 and 04 push-pulled the trains, but when LP04 developed flat batteries, it was replaced by LP01. Wingrove & Rogers 4wBE LF02 (with a plate: Whipp & Bourne Ltd, Castleton, Manchester, No. 50149 of 1942) was on display with four FB wagons. Railway enthusiasts were disappointed that they were unable to visit the railway workshop area, while the barring of

Heritage & Tourist

people being able to walk to the bunkers and warehouses for photography was also a cause for complaint. Brad Peadon, 02/04

RICHMOND VALE RAILWAY,
Kurri Kurri 1435mm gauge
Richmond Vale Preservation Cooperative Society Ltd

East Greta Coal Mining Company's guards van No.42 has been returned to service following a restoration project that involved nearly 2000 man hours of work, mostly carried out by Cliff Batt and Ray Hennessy. Many timbers in the roof, floor and sides were replaced, major repairs were required to the brake rigging and the old paintwork was totally stripped back to bare boards before a full repaint in its original East Greta colours. Built by Clyde Engineering, the brake van was delivered to the old East Greta Coal Mining Company between 1905 and 1910. Of similar design to the familiar NSWGR CHG brake vans, No.42 remained in service on the South Maitland Railways until 1978, when the 4-wheel non-air coal hoppers were replaced with bogie steel wagons. The guards van arrived at the museum in January 1987.

Restoration of 0-4-0ST *KATHLEEN* moved another step forward in recent months with the removal all the old tubes from the boiler before placing an order for a full set of new tubes. Only very minor repairs are needed to the water side of the firebox and the front tube plate.

Graham Black, 2/04

SANDGATE CEMETRY,
Newcastle 1435mm gauge

As reported in LR 171 (p.27), the non-air 4-wheel coal hopper wagon loaned to Sandgate Cemetery has been returned to the RVR, where it has been placed on a plinth at Pelaw Main for public display. The wagon, numbered 2000 at Sandgate, is actually (Hebburn) H542 and can be easily recognised as such by the distinctive axlebox covers which have AA Co. 1913 cast on them. The Sandgate Cemetery Trust had the wagon and a section of the line restored under a work for the dole scheme several years ago as part of a project to preserve the last cemetery railway in New South Wales. It was intended that the display would be a memorial to the many miners buried in the cemetery. Unfortunately, the works were undertaken by non-railwaymen, without assistance or guidance from experienced fettlers, and poor quality second-hand sleepers were used and no ballast was provided. It is likely that the branch remnants will now be removed.

Jeff Mullier, Peter Neve, LocoShed E-mail group, 2/04

STATE MINE HERITAGE PARK & RAILWAY, Lithgow
1435mm gauge

Following extended negotiations, agreement has been reached between the organisers of *Ironfest 2004* and the Lithgow State Mine Heritage Park and Railway to enable the festival to proceed on the State Mine site on 24 to 26 April 2004. This event is recognised by Tourism NSW as a regional flagship event, featuring artists, musicians, performers and workshops. On 28-29 February, the museum hosted a blacksmithing weekend when blacksmiths worked on two forges and numerous anvils to complete the "Gate Project" which was commenced during Ironfest 2003.

Although the museum has received interim rail accreditation from the NSW Department of Transport (LR 175, p.28), passenger train operations will not commence until later in the year due to the shortage of accredited rolling stock. Restoration work on the locomotive and rolling stock continues, with painting of 2-6-2ST 2605 (Dubs 2794/1892) being completed in February.

Ray Christison, 2/04

WARATAH PARK, Duffys Forest
610mm gauge

Further to the report in LR 175 (p.28), Peter Evans from the Hunter Valley has purchased the entire equipment from the tourist railway. Following the takeover in 2003 of the former wildlife park by Earth Sanctuaries Ltd, headed by the well-known environmentalist John Wamsley, it is being developed as a nocturnal sanctuary. The rail equipment, comprising two locomotives, three carriages, wagons and track, was surplus to requirements. Motor Rail "Simplex" 4wDM 11035 of 1965 had been rebuilt at some time with what appears to be a Ford Transit diesel, arranged fore-and-aft with radiator in front (in contrast to the normal "Simplex" transverse arrangement). The John Dunlop locomotive, number 8, is a B-B DM (not PM as previously reported). It has a Hilux diesel engine and automatic transmission. Both locomotives were successfully started up after minimal attention. The equipment will be used for a new private railway to be established on 200 acres of private property in the Hunter region. It is understood that the new owner has 90 days to remove all the equipment from its present location.

Peter Evans 2/04; Waratah Park home page, via John Browning

Coming Events

APRIL 2004

3-4 Puffing Billy Railway, Gembrook, VIC. Day Out with Thomas – a family attraction at Emerald town. For information, phone (03) 9754 6800.

4 Wee Georgie Wood Railway, Tullah, TAS. 610mm gauge steam train operations, 1200-1800 – also on 11 April – last operating day of season. Phone (03) 6473 2228.

8-25 Semaphore & Fort Granville Steam Railway, SA. Miniature steam strains operate daily. Information: (08) 8341 1690.

11 Cobdogla Irrigation & Steam Museum, Barmera, SA. Open Dey with steam train and traction engine rides, plus Humphrey Pump operating; 1100-1630. Phone (08) 8588 2323.

24-26 Ironfest 2004, State Mine Museum, Lithgow. Artists, musicians, performers and workshops celebrating Lithgow's industrial heritage as an iron and steel city. Informetion (02) 6353 1638 or www.lisp.com.au/~ironfest.

MAY 2004

2 Puffing Billy Railway, Gembrook, VIC. Annual Great Train Race – from Belgrave to Emerald Lake (13.2km) racing against Puffing Billy's big brother G42. For information, phone (03) 9757 6775.

15-17 Goolwa-Port Elliot Railway 150th Anniversary, SA. Programme of heritage train trips, paddle steamer parades, vintage sailing regatta, historical displays and walks, musical entertainment, etc at Goolwa, Port Elliot and Middleton. An informal ceremony on 18 May will officially marks the 150th Anniversary. Inquiries (08) 8555 3488. www.australiasfirstrailway.com

15-16 Campbelltown Steam & Machinery Museum, NSW. Oil, Steam & Kerosene field days with steam railway, tractor ploughing, engine displays, vintage cars, etc.

16 Cobdogla Irrigation & Steam Museum, Barmera, SA. Open Day with steam train and traction engine rides; 1100-1630. Phone (08) 8588 2323.

23 Bennett Brook Railway, Whiteman Park, WA. *Friends of Thomas the Tank Engine* Day with the Fat Controller and narrow gauge steam and diesel trains. Information: (08) 9439 2821.

NOTE: Please send information on coming events to Bob McKillop – rfmckillop@bigpond.com - or the Editor, *Light Railways*, PO Box 674, St Ives NSW 2070.

Victoria

KERRISDALE MOUNTAIN RAILWAY 610mm gauge
Andrew Forbes

A visit to the KMR on 15 November 2003 by a group of the Chartered Institute of Transport Australia found both locomotives – the Ruston and Malcolm Moore – turned out in impeccable condition. The line ends on a hill above the Forbes residence where there is a run-around loop, with a small station to be built in the near future. Andrew Forbes advised the group that his next project is to build a steam-powered rack locomotive.

Subsequently, construction has commenced on a new locomotive shed and workshop at the bottom points precinct and the loop at The Summit has been extended to allow two trains to be accommodated. The station precinct at the latter site will be allowed to consolidate before installation of a shelter and fence. The KVR has also acquired four passenger carriages from the defunct St Helena Island Tramway via ANGRMS (LR 170, p.27). They have been completely stripped for assessment and the design of brake gear, prior to rebuilding during 2004.

Malcolm Dow, 1/04; Andrew Forbes, 2/04.

PUFFING BILLY RAILWAY
762 gauge
Emerald Tourist Railway Board

A 'Day of Total Fireban' on Sunday 7 February meant that a roster to fire on the Puffing Billy Railway became a second person task on 0-6-0DM D21 (formerly TGR V12) instead. A couple of the firemen with time on their hands had given D21 a long needed cut and polish, which made it positively glisten in the sun. The three trains run that day were well patronised, with one 'punter' asking if D21 was really a steam locomotive!

It was noted that a temporary track had been laid from the workshop to allow the Beyer Garratt G42 to be moved into the running shed. This is to prevent the locomotive being marooned in the workshop while the extensions are being undertaken. There is still work required to complete G42, a new throttle valve being the focus of the workshop staff in February. The old one, from a D1 or D2 VR steam locomotive, was thin in places and worked out to be below capacity for the extra cylinders of a Garratt.

John Fowler 0-4-0WT (16249 of 1923) back at its home, Rocky Point sugar mill, 4 December 2002. Photo: Peter Jones

Ex-Proserpine sugar mill 4-6-0T DIGGER *(Hunslet 1317 of 1918) at Proserpine Historical Museum. Photo: Lynn Zelmer*

Newly arrived ex-Maritime Services Board Motor Rail "Simplex" 4wDM M.S.B. No.2 (20560 of 1955) at Campbelltown Steam Museum on 12 October 2003. Photo: Ray Graf

Heritage & Tourist

The ETRB is responding to visitor requirements for a quality experience by establishing business partnerships to further develop attractions and facilities at key stopover points. Following critical feedback on Emerald Lake Park during 2002, Cardinia Council has improved the presentation of the park considerably and customer feedback is now generally favourable. In response to customer complaints that there are insufficient attractions at Gembrook, the Board is working with local business people to develop more events and new attractions, and to ensure that what is advertised is open. The railway, for its part, is developing Lakeside to Gembrook return discounted packages that use excess capacity in order to deliver more customers to Gembrook.

In another initiative, the Board appointed April Williams to the new position of Manager Commercial Operations in December 2003. Her task is to increase the return on the railway's refreshments services and souvenir sales, which has been relatively low compared with other tourist ventures in Victoria and internationally.

Bill Hanks, 02/04; *Narrow Gauge* No.171, Dec. 2003

Tasmania

SPION KOP LOOKOUT, Queenstown 610mm gauge

A replica mine portal/tunnel is to be found beneath the Spion Kop lookout and is accessed from the car park at this site. Inside is to be found an English Electric battery locomotive similar to the one on open display at the Mt Lyell Museum in Queenstown. Because it is somewhat protected from the elements it is in a lot better condition than the one at the museum, and is painted green with red wheels. Also on display is a Granby car and an Eimco compressed air bogger. A plaque is fixed to the cage surrounding the locomotive stating: "This tunnel is a replica of the now disused North Lyell Tunnel. The English Electric underground loco was purchased from Siemens (Aust)

in 1928 for £1635. It operated on a 24in gauge track and was powered by a 500 volt DC trolley line driving two 38hp elect AC motors. It was designed to haul a train of 78 ton all up weight, but usually hauled a train of 180 ton. Estimated tonnage of copper ore hauled 20,000,000. Estimated distance travelled in excess of 1,000,000kms. Behind the loco is a Granby dump truck and an Eimco rail bogger. The bogger operates on compressed air and is used to load the dump truck."

Chris Walters 1/04

Another recent arrival at Campbelltown Steam Museum is this vintage Fowler 0-4-0DM (18801 of 1930), ex-Plane Creek Central sugar mill number 5, seen shortly after being unloaded on 17 October 2003. *Photo: Ray Graf*

South Australia

COBDOGLA IRRIGATION MUSEUM 610mm gauge
Cobdogla Steam Friends Inc.

The restored Simplex locomotive *FARLEIGH* (Motor Rail 7369/1939, see LR 172, p.28) has been earning its keep, being used during regular operating days, twilight train rides and for charters. Several bus tours by school groups have resulted in mid-week opportunities for the children to tour the museum and ride the train. The museum is now usually open for static tours and diesel train rides on Wednesdays and during the regular Sunday working bees.

A Fairmont section car has been restored and converted to 610mm gauge from 1067mm gauge. A major problem soon became apparent on its first run at the museum, when it was found that the flanges on the pressed steel wheels were too thick to pass through the v-crossings in the points, resulting in instant derailments. It is now back to the drawing board to devise a means of overcoming this problem before the section car will be used again. The points on the museum railway are converted from broad gauge and the gaps in the v-crossings have been reduced to accommodate the wheels being used on the carriages.

Denis Wasley, ASP 80, February 04

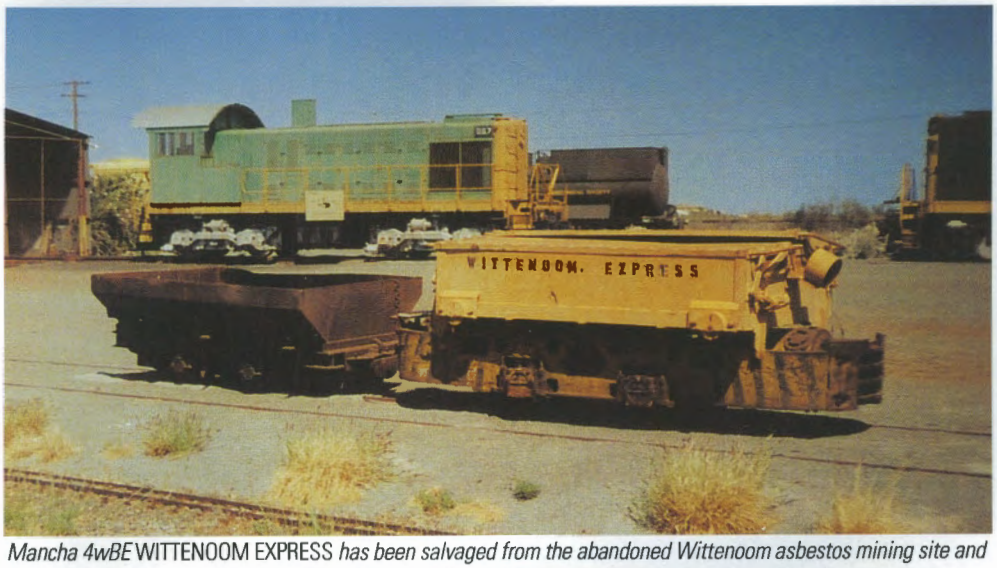
Gemco 4wBE locomotive LP 04 and articulated bogie passenger car at the Millenium Parkland Railway open day, Sunday 15 February 2004. *Photo: Brad Peadon*

SEMAPHORE-FORT GRANVILLE STEAM RAILWAY 457mm gauge
Port Dock Station Railway Museum Inc.

Operations at Semaphore resumed in September 2003, when good weekend weather brought strong

The newly restored East Greta Coal Mining Company brake van No.42 at the Richmond Vale Railway on 22 February 2004. *Photo: Graham Black*

Kerrisdale Mountain Railway's Ruston & Homsby 20DL 4wDM (B/N 285301 of 1949) and four-wheel open carriage at The Summit loop during the Chartered Institute of Transport Australia's visit on 15 November 2003. Photo: Mal Dow



Mancha 4wBE WITTENOOM EXPRESS *has been salvaged from the abandoned Wittenoom asbestos mining site and placed on display at the Pilbara Railway Historical Society Museum at Dampier, together with a four-wheel mine car. This locomotive is believed to be one of Mancha 3043 and 3044 of 1949, and 4079 of 1957. Photo: John Smith*

The 4wPM Volkswagen-engined steam outline, locomotive Coffee Pot, *standing outside the depot at Carnarvon with the carriage for the jetty tramway. When photographed by Ray Graf in June 2003, operations had been suspended due to insurance problems.*

passenger numbers during the school holiday period. Passenger numbers were also strong during the summer holidays, with a number of extra Saturday runs been scheduled, thus ensuring a successful operating season. The railway will now run on Saturdays and Sundays during school holidays.
Catchpoint, November 2003 and January 2004

Western Australia

BENNETT BROOK RAILWAY, Whiteman Park 610mm gauge
WA Light Railway Preservation Assoc. Inc.

The BBR was again experiencing difficulty in obtaining affordable public liability insurance during January and the future of train operations beyond 11 February was in some doubt. The problem of getting insurance companies to provide quotes in good time prior to the expiry of the existing cover is one experienced by many railway preservation groups.

Train operations on the BBR were popular during the summer holiday season, with services operating every day, including Christmas Day. Saturday evening bush dance trains operated through to the end of March.

In February, 0-4-0DM *PLANET* (FC Hibberd 2150/1950) and Gemco-Funkey 6wDM *WYNDHAM* remained the stalwarts of the locomotive fleet, with 0-4-2T BT1 (Perry 8967 of 1939) undergoing its annual inspection. 0-6-0 DM *FOWLER* (J Fowler 4110019/1950) was out of service pending re-profiling of its wheels.
BBR Newsletter, February 2004

LOOPLINE TOURIST RAILWAY
1067mm gauge

Further to LR 175 (p.31) the FINAL JOURNEY on the old line from Boulder to the Chaffers Mine Site and Power Station was scheduled to operate on January 17 2004. Steam locomotive G123 *LESCHENAULT LADY* was the motive power for the 6pm departure from Boulder. A barbeque was provided for 100 patrons at the Chaffers Power Station. Loopline trains have been suspended until the new northwards line is completed.

David Whiteford, 1/04; 2/04

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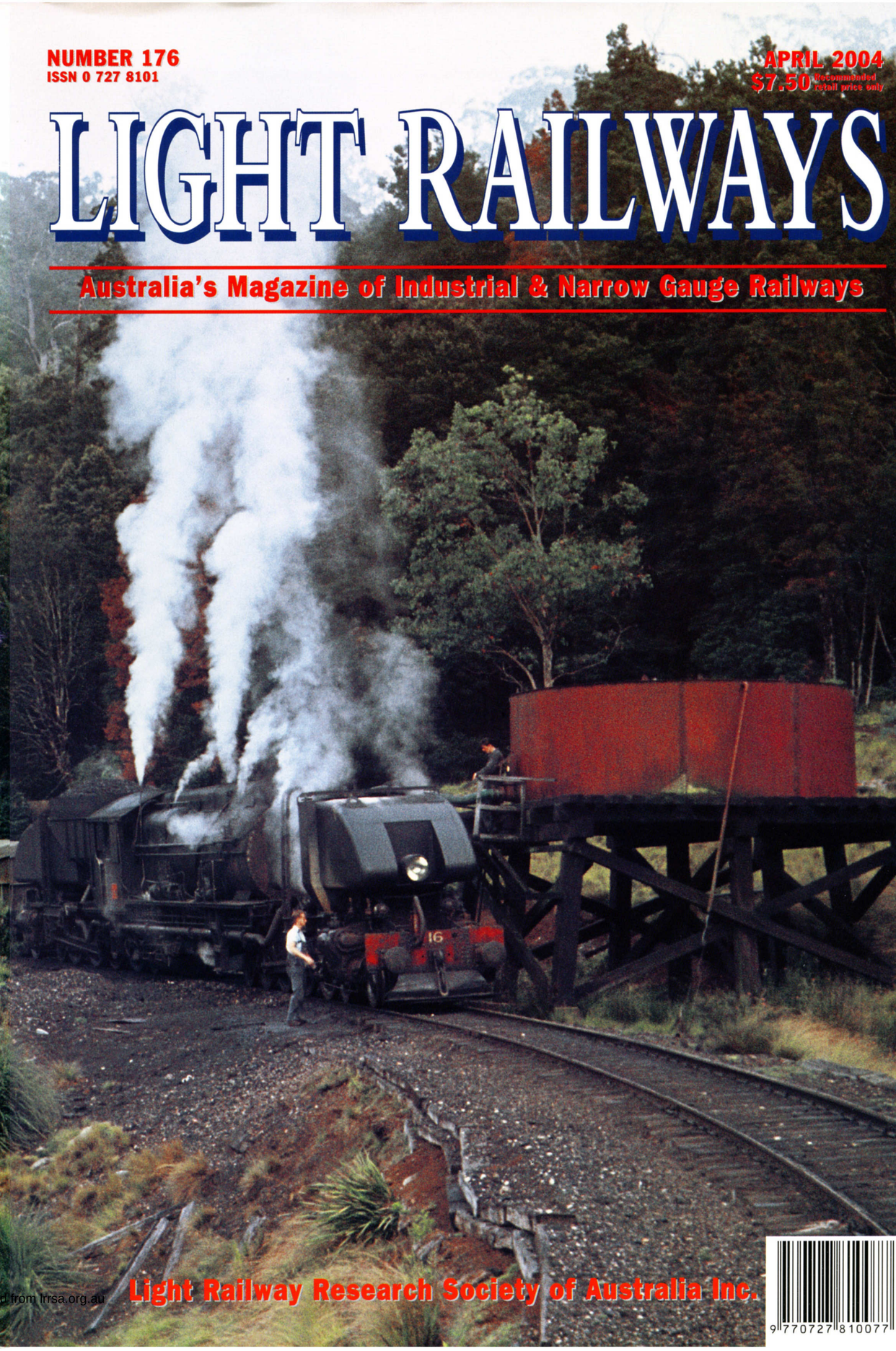

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