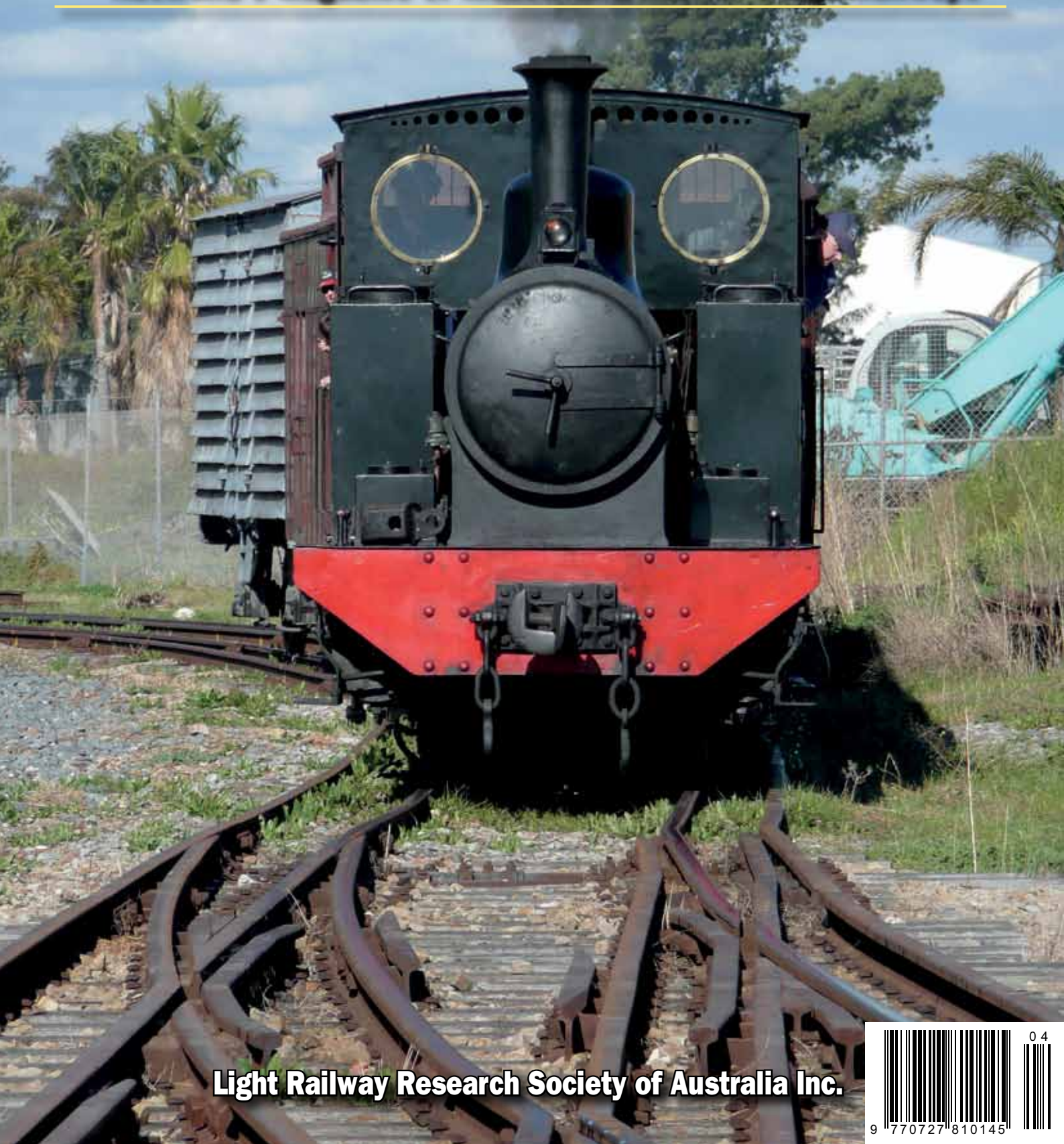


NUMBER 220
ISSN 0 727 8101

AUGUST 2011
\$7.95 Recommended
retail price only

LIGHT RAILWAYS

Australia's Magazine of Industrial & Narrow Gauge Railways



Light Railway Research Society of Australia Inc.



LIGHT RAILWAYS

Australia's Magazine of Industrial and
Narrow Gauge Railways

No 220 August 2011

ISSN 0 727 8101 PP 342588/00002

Editor: Bruce Belbin,
PO Box 674 St Ives NSW 2075

Research, Heritage & Tourist Editor:
Bob McKillop,
c/o PO Box 674 St Ives NSW 2075

Industrial Railway News Editor:
John Browning,
PO Box 99 Annerley Qld 4103

Distributor: Gordon and Gotch Limited.

Printed by Graphic Impressions.



**Light Railway Research Society
of Australia Inc. A14384U**
PO Box 21 Surrey Hills Vic 3127

COUNCIL

President: Bill Hanks (03) 5944 3839

Secretary: Phil Rickard (03) 9870 2285

New South Wales Division

c/o PO Box 674 St Ives NSW 2075

President: Jeff Moonie (02) 4753 6302

Secretary: Ross Mainwaring (02) 9449 2738

South Australian Group

9 Craiglee Dr, Coromandel Valley SA 5051

Secretary: Les Howard (08) 8278 3082

South-east Queensland Group

365 Fairfield Rd, Yeronga Qld 4104

Secretary: Bob Gough (07) 3848 3769

Tasmanian Representative

11 Ruthwell St, Montrose, Tasmania 7010
Ken Milbourne (03) 6272 2823

MEETINGS

Regular meetings are held in Adelaide,
Brisbane, Melbourne and Sydney.

For dates, times and locations of future
meetings, see LRRSA NEWS, page 32.

Subscriptions: \$48.00 for year ending
30 June 2012, providing six issues of
Light Railways magazine, information on
Society activities, 25% discount on LRRSA
publications, etc. Overseas: \$A75.00
economy airmail. Payment by cheque,
money order, Mastercard or Visa.
Contact the Membership Officer,
PO Box 21, Surrey Hills, Vic. 3127. Fax (03)
9701 8221. Email: lrrsa@lrrsa.org.au

Sales: Back issues of *Light Railways* and
other publications available from LRRSA
Sales, PO Box 21, Surrey Hills, Vic. 3127.

LRRSA Web Page:

<http://www.lrrsa.org.au>

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 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
1 super foot (sawn timber)	0.00236 cubic metre

Contents

The Manning River breakwater railway – Part two	3
Beneath the Silver City	15
Industrial Railway News	26
Letters	31
Book Review	31
Research	33
Heritage & Tourist News	34

Comment

As foreshadowed by Bruce Belbin in LR219, the LRRSA National Conference and 50th Anniversary Dinner event at the Nobelius Packing Shed, with a journey there and back on the Puffing Billy Railway's dinner train behind Garratt locomotive G42, were highlights of 2011 for all those involved — and many of us backed up for the coach trip to Walhalla. Reports on these three events are featured in this issue of *Light Railways*.

While the mood of the National Conference reflected the healthy nature of the LRRSA at this point in time, it also recognised the dangers of complacency, and there were many constructive and innovative ideas put forward on how we should tackle the challenges that lie ahead for our voluntary-run organisation. These include a static and ageing membership base, the need for succession planning for our management and editorial teams, and the challenges posed by advances in communication technology for our core functions of research and publication.

Given that I have been involved in editing this magazine for all but five years of the period since 1980, I indicated my desire to 'wind-back' my involvement as a co-editor. A volunteer stepped forward, but subsequently postponed his involvement for health reasons, but Richard Warwick and Simon Moorhead have joined our editorial team and Ruth Kerr will assist with policy development.

This issue features two major articles — the conclusion of the Manning River breakwater railway story and the commencement of Ross Mainwaring's article on underground mining railways at Broken Hill. We recognise that there has been a bias towards NSW material, but South Australians may also claim the latter!

Bob McKillop

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 proviso that the Society has the right to reprint, with acknowledgement, any material published in Light Railways, or include this material in other Society publications.

Front Cover: Former Broken Hill Associated Smelters 1067mm gauge 0-6-0T PERONNE (Andrew Barclay 1545 of 1919) and its four-car train prepare to traverse an interesting multi-gauge turnout at the National Railway Museum, Port Adelaide, during last year's 'Day out with Thomas' festival, which ran from 10-18 July. Photo: Bob Sampson



Steam Tram Motor 33 at work on the Manning River Training Wall in the 1920s. Just visible in the left background is the crane wharf where rail trucks of stone destined for the south spur wall will be lifted into punts to be taken across the river.

Photo: Manning District Historical Society Collection

The Manning River breakwater railway

Part 2 – The NSW Public Works Department era (1900–1927)

by Ian McNeil

Foreword

Part one of this history appeared in *Light Railways* No. 219, June 2011. It covered the period from 1895 to 1900 when private contractors were building the Manning River breakwaters.

The establishment and operation of Crowdy Head Quarry and the Breakwater railway were detailed, and insights were given into the problems faced by breakwater contractors and ships' captains alike as they battled the common foes of storm waves and shifting sandbars

Public Works Department takeover: 1900

In February 1900 the PWD announced that George Willcocks' contract would not be renewed. It was considered that the PWD itself could carry out the work for £13,000 less by employing day labour. The *Sydney Daily Telegraph* reported the news:

Upon analysing the tenders in connection with the Manning River harbor works, Mr. C. W. Darley [PWD Engineer-in-chief for Harbours and Rivers] is of the opinion that the prices are too high, and that the Works Department could probably carry out the work for about £13,000 less by day labor, after allowing about £22,000 for purchase of plant, punts, and for providing rails and sleepers for laying a new line to the quarry, purchase of a locomotive, trucks, etc. The Minister for Works has decided that the work shall be done by day labor.

The above arrangement will of necessity be of great disappointment to Mr. G. C. Willcocks, the present contractor, who has only been keeping

*the contract on from month to month, hoping to obtain a larger definite contract. The north breakwater is out about 3,000 feet, and the inner training wall has been extended 2500 feet up the stream. It is not proposed to extend the northern breakwater any further at present – whatever may be decided with respect to the inner training wall, but a start is to be made with the southern training wall, by day labor, as the most important work to be carried out at present.*¹

In March 1900 the PWD took over and purchased the whole of Willcocks' plant. Breakwater construction was suspended until August while new facilities were built and the existing plant was reconditioned. The *Manning River Times* faithfully reported this activity:²

Mr. W. C. Reading is having a new engine shed erected near the weighbridge, 66ft x 25ft., the floors, and a 45ft. pit being formed of concrete. The land has been levelled for the erection of the workshops.

The whole of the buildings at Harrington, in connection with the harbour works, including the blacksmith's shop, store, stables, etc., are to be removed to the new site. This will do away with the sharp curve in the line round the Flagstaff Hill. There are 68 men employed at present in connection with the works.

The whole of the railway line has been taken up from Harrington to Crowdy, and re-laid, many of the old curves being done away with, the rails pressed to straighten them, and in many places new sleepers laid down, to the number of about 3000, the sleepers being put closer together than before, in order to stand a heavier strain during the construction of the southern wall, in which stone up to 25 tons in weight is to be used.

The work on the line is not quite finished, the difficulty in obtaining sleepers, owing to the late wet weather, having somewhat delayed operations, but it is expected to be in trim for the train within a week, when the northern breakwater and the inner training wall will be further lengthened - the outer wall probably by another 1000 feet. The line has been carried near the Pilot's boatshed, to allow the shunting of trucks on to the outer training wall.

Before work can be started in connection with the wall, wharves will have to be constructed on each side of the river to carry the necessary cranes for lifting the stone from the punts, and it is not known when that work will be commenced, but preliminary surveys are now being made by Mr. Reading.



Looking east towards the river mouth, the steam tug John Gollan is tied up at the public wharf alongside the Manning River training wall. In the background is Flagstaff Hill with Harrington village to the left beside it.
Photo: Peter Neve Collection

William Reading initially stayed on as the Resident Engineer, but resigned a few months later to take up a position in Tasmania. He was replaced by FW Clarke, the PWD's Resident Engineer from the Batemans Bay harbour works.

The South Breakwater: 1901-04

Although Sir John Coode had considered the southern breakwater to be the more important of the two, work did not start on it until the northern wall was all but finished. When work did get underway in early 1901, progress could only be described as leisurely. As there were no convenient sources of stone on the southern side of the river, stone from Crowdy Head Quarry was to be used to construct the breakwater.

Most of 1901 was taken up by the construction of two crane wharfs, one on each side of the river. The northern or Harrington crane wharf was constructed first, just in front of the tip-head of the training wall, some 3000 feet upstream from the Painted Rocks. The end of the training wall was built up by another 6 feet and widened to take a loop siding for locomotive run-around purposes. The southern, or Brighton, crane wharf was sited across the river, a short distance upstream from the northern crane wharf.

To construct the crane wharves the PWD rented a steam pile driver and two coal barge punts from the North Coast Steam Navigation Company (NCSNC). The punts were lashed together and the pile driver mounted on them. This set-up was employed to drive the heavy wharf piles up to 80 feet down into the loose sediments of the river bed. Owing to the strong currents in the vicinity much difficulty was experienced with the work of driving the piles.

The two steam cranes were in place on their respective crane wharves by early 1902, and in March, Wingham boat-builder SJ Donaldson delivered a pair of 200-ton capacity punts to carry stone across the river. Commissioning of the plant was successfully carried out in April but with construction

work finally due to start in May, there was another hitch. The chartered steam tug, SS *Florrie Ellison*, hired to tow the punts across the river, was wrecked on the entrance bar while trying to cross into the Manning on its delivery run. This delayed the start until a replacement tug, the SS *Garnet*, arrived in August 1902. Finally, in October 1902 the *Manning River Times* was able to report the start of the long awaited construction:

The southern training wall was commenced last month at Brighton [Manning Point], about 100 yards from the steamers' coal wharf, and up to Monday there was about 2 chains of the wall completed.

One rake of stone, consisting of 18 trucks of about 8 tons each, is tipped every day, and double this quantity is to be tipped very shortly. The boxes containing the stone are taken over the river on the punts made at Wingham by Mr. Donaldson – being lifted off the trucks by a powerful steam crane on the Harrington side, and landed at Brighton by a similar crane, when they are again placed on a truck and run to the tip head. The punts are towed across the river by the SS Garnet.

In connection with this work there are 3 extra men employed on the Brighton side of the river, 4 at Harrington, and 3 on the steamer, making a total of over 100 men employed on the works.

The northern training wall and the inner training wall are also being worked - the latter only being about 150 yards from Chinaman's Point, when it will be completed.

There is another powerful steam crane at the Crowdy Quarry having been started last week. This crane was tested to lift 10 tons of stone in a 20ft radius, and is a similar one to those at Harrington and Brighton. There are now two steam cranes at work in the Crowdy Quarry. It is intended shortly to place a locomotive on the southern side of the river, to work the stone trucks.³

The promised additional locomotive, however, did not materialise, and haulage on the southern wall construction siding was carried out by horse teams. Construction continued until February 1904, when over 35,000 tons of stone had been quarried, railed, punted and tipped to form a training wall 1500 feet long along the south bank, extending both up river as well as seawards.

Harbour works shutdown: 1904

In 1901 the NSW Government began to scale back its investment on harbour works for coastal rivers, and during the next few years construction works ground to a halt at most river mouths.

Breakwater construction at Cape Hawke and the Hastings River was stopped in 1901, followed by the Clarence River in 1902; the Nambucca River, Camden Haven and Trial Bay in 1903; the Tweed River in 1904, and the Macleay and Bellinger Rivers in 1906. The Richmond River harbour works were spared, but expenditure was cut back to a maximum of £500 a month. Only harbour work construction at Newcastle and Port Kembla was continued with any vigour.

The writing on the wall for the Manning River harbour works was seen in September 1903 when half the work force was laid off and the remainder reduced to a four-day working week. Construction work on the southern breakwater wall limped on for a few more months until the end of February 1904 when all work was stopped and the hands paid off.⁴ Only one employee was retained, a caretaker at the PWD's Harrington Depot. The steam tug SS *Garnet's* punt-towing contract was terminated and she returned to Sydney.

The Crowdy Head quarry cranes were brought to Harrington Depot for storage, though not without incident, as the heaviest crane broke 12 steel rails during its trip to Harrington.⁵ One crane was loaded on board the SS *Myee* and shipped to Sydney, to be used on the construction of the Cataract Dam. The remaining cranes were boarded up to protect them from the elements. It is believed that the locomotive *Tarry* was also stored at Harrington depot.

The effect on the Harrington community was severe. Most of the workforce left to seek employment elsewhere, with many of the single men catching the Sydney steamer to the 'big smoke' to try their luck there. Only 12 families, mostly those belonging to government employees, remained in the village. Local businesses closed down and school enrolment

plummeted. There was scarcely anyone left at Crowdy Head apart from the lighthouse keeper and his family. Another casualty was the cancellation of the annual school picnic train to Crowdy Head.

NSW North Coast Railway arrival: 1913

When breakwater construction limped to a halt in early 1904, local and shipping interests made repeated requests for the NSW Government to complete the Manning harbour works. But Government policy was changing. Over £1,000,000 had been spent on North Coast harbour entrance works and overall the results were unsatisfactory. River entrances such as the Manning were still said to be unreliable and hazardous for shipping. A railway line passing through the main river ports was being viewed as a better investment that would reduce reliance on coastal shipping and capital-intensive breakwaters which were proving vulnerable to storm damage and costly to repair.

Agitation for the North Coast Railway had begun well before the NSW Government had embarked on its extensive program of harbour works, and as early as 1889 trial surveys were carried out between the Hunter and Clarence Rivers. Railway construction first began on the far North Coast, and in 1894 a line from Murwillumbah south through Byron Bay to Lismore was opened for traffic. GC Willcocks, who later built most of the Manning breakwater walls, was one of the main contractors on this section. The line was later extended to Casino in 1903, then south to Grafton two years after that.

The gap between Grafton and Maitland was addressed when the NSW Government passed the *North Coast Railway Act (Maitland to South Grafton)* in 1906. Permanent way surveys were carried out, and the first construction tenders were awarded in the following year. The first section of the new line was opened from Maitland to Dungog on 14 August 1911, and the second, amidst much fanfare, to Taree on 5 February 1913.



A picnic party en-route to Crowdy Head for a day out. The stone trucks were often used for unofficial passenger purposes such as this. One cannot help but feel sympathy for the tired-looking horse expected to haul this lot.

Photo: Peter Neve Collection



While attempting to enter the Manning River during heavy weather in April 1910, the two-month old NCSNC steamer Minimbar was swept onto the end of the breakwater and broke her back. All passengers and crew were saved but the vessel was a total wreck.

Photo: Manning District Historical Society Collection

The North Coast Railway however did not reduce the reliance on coastal shipping to the extent the government envisaged. It did attract a significant amount of the passenger trade, particularly those prone to sea sickness. But it was still cheaper to ship bulk goods and produce to Sydney by sea. Requests to complete the Manning Harbour Works continued unabated.

The Manning River Harbour Works Act: 1911

The NSW Government persevered with the practice of dredging to keep river entrances open and their channels navigable. To this end the PWD employed an extensive fleet of ladder and suction dredges up and down the coast. The suction dredge *Dorus* was stationed on the Manning River and worked more or less continuously to try and keep the navigable channel open, especially through the shoals of the Harrington Narrows. Periodic visits by the specialised bar dredges *Antleon* and *Tethys* were less successful in maintaining an adequate depth of water across the entrance bar.

Crossing into the Manning remained a chancy business, especially in bad weather. The northern breakwater had stabilised the position of the river entrance, but the shipping channel alongside it was narrow and subject to strong tidal currents. Ships entering the river had to pass very close to the end of the breakwater to gain the channel. And without the crucial southern breakwater, limitless quantities of sand washed into the river entrance during southerly gales.

Within a few years there were three high profile shipwrecks at the Manning entrance, all involving the northern breakwater. First was the steamer *Kincumber* on 24 October 1908. She struck the end of the breakwater trying to cross in, and while disabled was driven ashore with the loss of two lives. The NCSNC lost two coastal steamers there in short order. The *Burrawong* hit the side of the breakwater in March 1909 and sank in the shipping channel. She could not be salvaged and was blown up by PWD divers to clear the channel. Her replacement, the two-month old *Minimbar*, hit the end of the breakwater in April 1910 and broke her back, becoming a

total loss. On this occasion the breakwater railway was used to good effect during the salvage operations of the cargo and the ship's fittings.

Continued pressure on the State Government resulted in Sir John Coode's scheme again being referred to the Parliamentary Standing Committee on Public Works. The Committee reported in the affirmative on 28 June 10,⁶ and in 1911 the *Manning River Harbour Works Act* was passed. This authorised the construction of 3797 yards of breakwater and training walls on the southern side of the entrance. But crucially, the parliament did not vote the required £150,000 of funding for the bill.

Storm Damage Repairs: 1913-14

In July 1912 a destructive east coast winter gale smashed into the mid-north coast and severely damaged the Manning breakwater. As the *Sydney Morning Herald* reported:

Storm's Fury - Sea Walls Swept Away.

Mr. W. A. Lee, the district works officer, visited Harrington yesterday to inspect the damage caused by the recent storm, which is considered to have been more severe than the famous Maitland gale. Mr. Lee found that 60 chains of the northern training wall had been flattened out, and the rails and sleepers gone. The gantry, Government wharf, and crane wharf have been left unsupported, all the stones being washed away on either side, including sleepers and rails. The whole of the ballast on the breakwater has been washed out, while 60 feet of the tip-head disappeared. Rails in places are hanging in the air, and about 3 chains of wall have been flattened. The sand hills on the southern side of the entrance have disappeared, and all the traffic between the wall and the town is blocked and stuff will have to be landed in boats, while consignments for Sydney will have to be brought up to the wharf in boats.

The works officer estimates the damage at some thousands. It is practically certain from the above report that before any repairs can be effected to the northern training wall, the tramline to the quarry will have to be replaced by a new line as the old one is worn out. Some months must elapse before this can be done, and in the meantime the public will be put to great inconvenience. Should further heavy

weather come up the wall is bound to suffer if not at once repaired. The whole case is one which calls for urgent treatment.⁷

Ironically it was not so much the storm damage itself that prompted repairs to the breakwater walls, but more the need to bring in construction materials for the North Coast Railway. Large quantities of steel rails and fittings were being shipped in to Taree, Wingham and Langley Vale, and the situation at the river entrance was affecting this supply chain. The PWD began repairs in January 1913 with Crowdy Head quarry being re-opened and some 4½ miles of the railway line to Harrington refurbished. A local Harrington resident remarked with some nostalgia on this renewal of activity:

*There are some 25 or 30 men engaged in repairing the line at Crowdy, under the supervision of Mr. J. Hedges and the daily whistle of the loco reminds one of former years when the Harbour Works were in full swing.*⁸

The locomotive referred to is believed to be the venerable *Tarry* (Parkinson & Monaghan, 1870) which had been stored in the engine shed at Harrington since March 1904. Once again two or three 100-ton trainloads of quarried rock a day were hauled from the quarry to the Harrington walls.

The Harbour Works were still a dangerous place to work, and it was also during this short-lived re-opening that the only known fatality associated with them occurred.

12th April 1913. Accident at Harrington.

A serious accident occurred at the Harrington breakwater at 10:30am on Thursday, when Peter Blake, guard on the train conveying stone from Crowdy Quarry had his right leg broken and ankle smashed through a wheel passing over it. The accident happened on the training wall where the work of tipping stone from the truck was proceeding. The train was being backed out – there being only two trucks to be unloaded – and Blake was standing on the back of the last truck directing operations. The train was moving slowly at the time and Blake jumped off, but, in doing so, tripped

and fell, with the result that one of the wheels passed along his leg, breaking it and crushing the flesh from the knee to the ankle. The unfortunate man was picked up, and Mr. Sefton, the station master at Taree, who is spending his holidays at Harrington was quickly on the scene, and rendered first aid. Everyone is high in their praise of the splendid service rendered by Mr. Sefton. The injured man was placed in Nicholson's launch and conveyed to the District Hospital, Taree,

17 December 1913. Fatal Burning Accident.

Early on Sunday morning Mr. Cooke, locomotive driver at the Manning River Harbour Works, Harrington, was fatally burnt in his tent. He was taken to the Manning River Hospital, where he expired a few hours after.

Repairs to the breakwater walls continued well into 1914. Over 22,000 tons of stone were railed and tipped at a cost approaching £10,000. Mother Nature took another swipe in June 1914 though, when a heavy gale caused about 40 feet of the breakwater tip-head to disappear into the sea. After completion of the works a portion of the plant and stores were shipped off to the Nambucca River where breakwater repairs were underway.⁹ *Tarry* was shipped back to Newcastle for storage before being sold in 1915 to the NSW Navigation Department for service on Coffs Harbour Jetty.

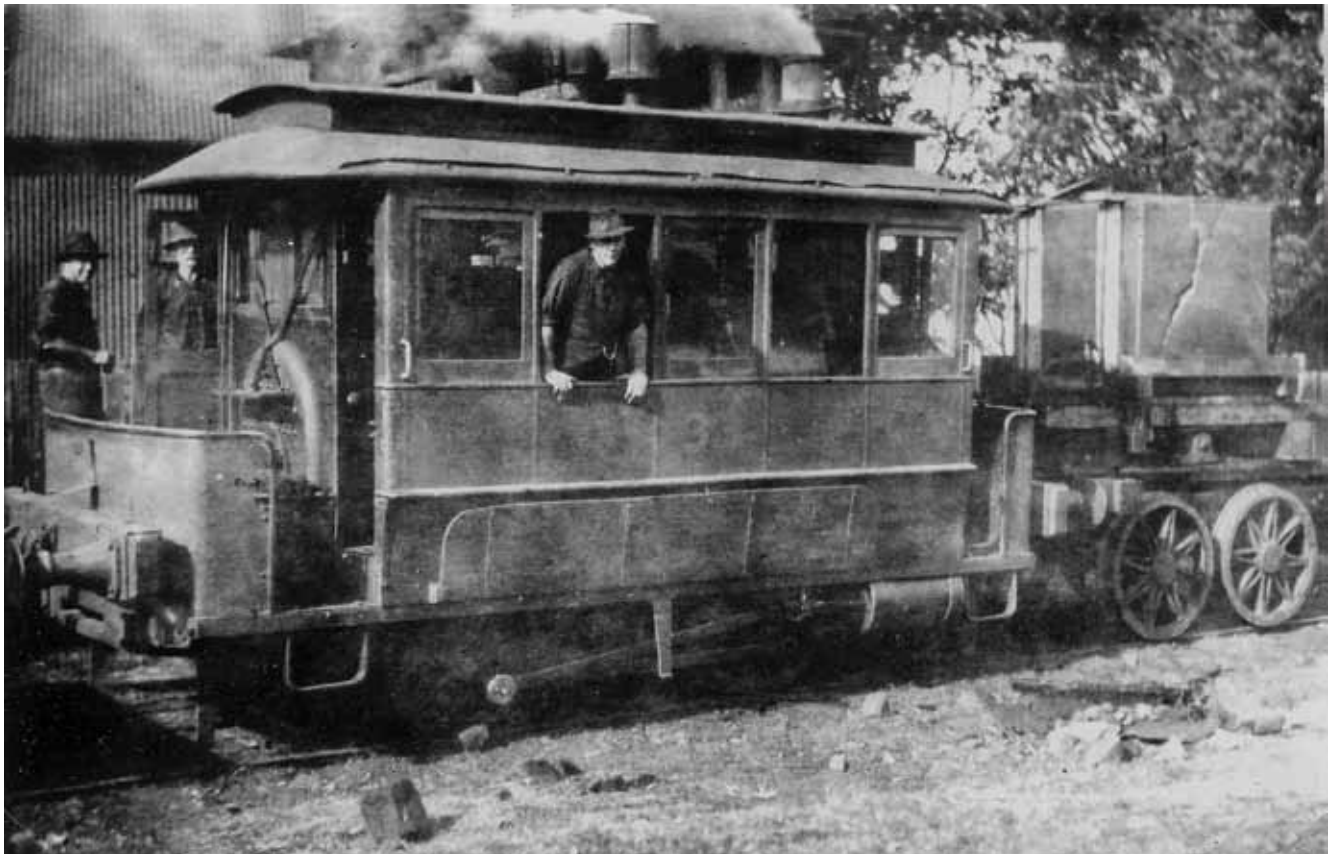
The Sydney Steam Tram Motors: 1919-1927

Work resumed on the Manning River walls after World War I finished. In the latter half of 1919, ex-Sydney steam tram motor 33 (Baldwin 5641 of 1882) was shipped in from Newcastle. It was one of 100 steam tram motors acquired by the NSW State Government between 1879 and 1891 from the Baldwin Locomotive Works, Philadelphia, USA, primarily for use on the Sydney tramway system. It was a small 0-4-0 saddle-tank locomotive, weighing 8 tons loaded, with fully enclosed bodywork made to resemble a small passenger tramcar.



The PWD sand-pump bar-dredge Tethys moored at the public wharf alongside the northern training wall. The Tethys was one of two modern dredges built specially for work on the outer sand bars of coastal rivers, but it was no match for the capricious Manning River.

Photo: Manning District Historical Society Collection



Ex-Sydney Steam Tram Motor 33 (Baldwin 5641 of 1882) alongside the PWD engine shed at Harrington. Brought to the Manning River in 1919, the motor spent the next eight years hauling stone from Crowdy Head quarry to the breakwater walls..

Photo: Manning District Historical Society Collection

It was one of only seven tram motors fitted with small 9in diameter x 12in stroke cylinders, the others having larger 10in and 11in diameter cylinders. They were found to be underpowered for the Sydney system and were relegated to the flatter Newcastle system. The motors were not really successful there either, and when larger 11-inch units became available following the electrification of the Sydney Tramways between 1903 and 1907, the 9in units were written off. By 1905, number 33 had been acquired by the PWD for use as an industrial locomotive.¹⁰

The movements of number 33 during its PWD ownership prior to 1919 have not been traced. Its delivery to Harrington, however, was delayed by the nationwide Seamen's strike in 1919 and operations did not begin until the strike was resolved later in that year.¹¹ The tram motor was employed hauling quarried rock for breakwater repairs and river spur wall construction until early 1926 when, it is believed, it was replaced by number 19.

Newcastle Steam Tram Motor number 19 (Baldwin 6390 of 1883) was a 10in diameter cylinder unit originally purchased for the Sydney system as their second number 46. As more 11-inch units entered into service in Sydney, 46 was relegated to the Newcastle steam tramway system where it was re-numbered (N)19 prior to 1902. It would seem to have had an uneventful life until 26 February 1926 when it was "stopped under offer to Works Department for North Coast".¹² Number 19 passed muster during a test drive by PWD officers in early March, and on 22 April 1926 it was sold to the PWD for £500 and delivered to Port Waratah for shipment to the Manning River.

It is assumed from the above that number 33, after some seven years of service on the breakwater railway, had reached the end of its economic life. The small amount of construction and repair work remaining to be done on the walls at this

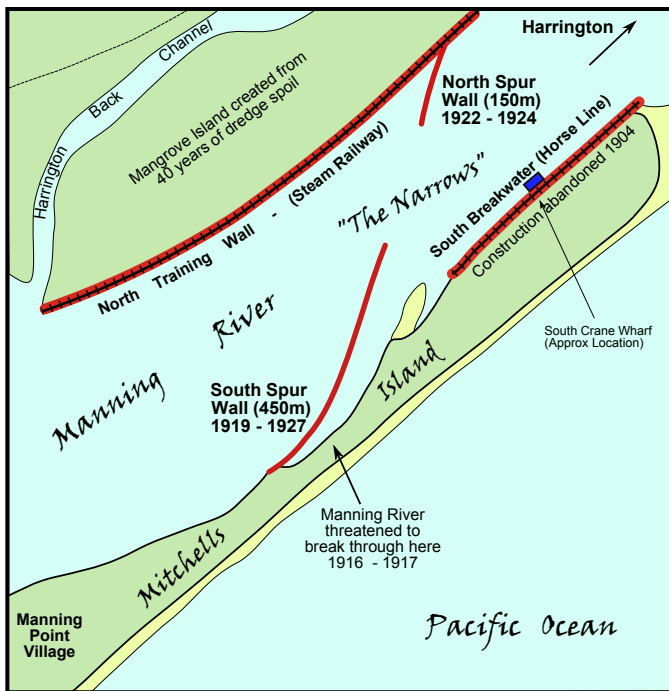
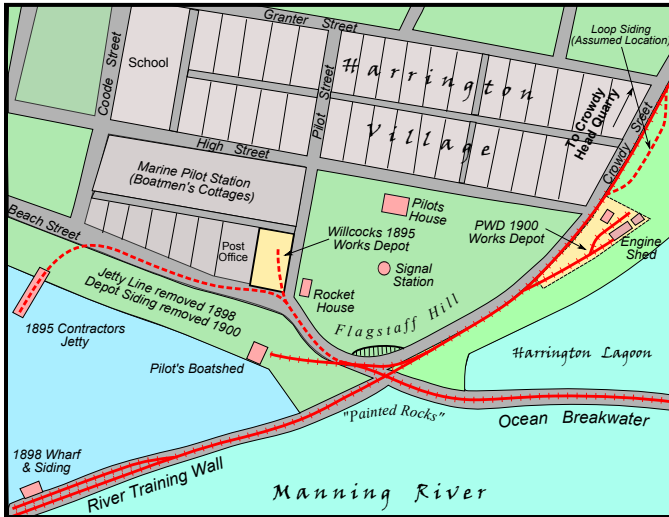
time did not require two engines in steam, so it possible that number 33 left on the same ship that delivered its replacement. The task of hauling stone to complete construction of the South Spur Wall – the last job on the Manning — fell to number 19, and 12 months later that was all over.

River Spur Wall construction: 1918–27

Winter storms in June 1916 washed much of the south sand spit at the tip of Mitchells Island away. This created a wide shifting entrance channel which the bar-dredge *Tethys* was brought in to correct. The sand spit had not re-formed by the following winter when another gale took out more of the backing sand dunes on the south bank. This time the tree cover was also destroyed and debris was swept some distance upstream. It was thought at the time that another flood could see the river break out through the narrowed southern shore near Manning Point to create a new exit and render the hard-won shipping channel unnavigable.

It was decided to build a spur wall into the river to direct the main flow away from the unstable southern shore. A spur wall would also focus the scouring action of the tidal currents in the shipping channel alongside the northern training wall. An additional benefit would be a reduction of the expensive and continuous dredging effort needed to keep the channel open across the inner bar at The Narrows.

In 1918 the PWD awarded a contract for the supply of turpentine timbers to build a 250 yard long timber spur wall out from the south bank of the river, about 180 yards downstream from Manning Point. The sum of £1440 was spent to reopen Crowdy Head Quarry and to refurbish the railway. Owing to extensive sand dune encroachments onto the line, it was necessary to deviate one section and relay others, including the connecting line on the training wall.



Above left: The triangular junction and head-shunt track arrangement at Painted Rocks allowed loaded trains to be backed out onto the ocean breakwater. The run-around loop north of the PWD Depot allowed locomotives to back loaded trains out onto the training wall, or to re-position them at the head of empty trains for the trip back to Crowdy Head. **Above:** A small travelling steam crane believed to have been employed raising the height of the Manning River training wall during the early 1920s. Photo: Manning District Historical Society Collection **Left:** Construction of the two river spur walls was a post-World War I initiative to focus tidal scour across the inner bar at The Narrows. They also served to protect the weakened south bank against the river breaking out a new exit to the sea. **Below:** A short spur off the main northern river training wall was constructed during 1922. It was too narrow for a construction rail siding and was built by stone tipped by the punt, seen on the left, which was equipped with a derrick and steam donkey engine for the purpose. Photo: Manning District Historical Society Collection





For many years the SS Electra was the regular coastal steamer on the Sydney to Manning River run. It is seen here alongside the crane wharf on the river's northern training wall. This wharf was equipped with a 20-ton capacity steam crane designed to load heavy boulders for the construction of the southern breakwater wall which, though started, was never finished. Photo: Manning District Historical Society Collection

The late arrival of the Baldwin steam tram motor delayed delivery of stone ballast to stabilise the upstream side of the timber wall. Before this could be done, heavy flood tides in April 1919 washed away most of the timber mid-section, which then had to be rebuilt.

Unlike the main Harrington walls, the spur wall was too narrow to accommodate a rail siding on top. Stone to construct it was rail hauled from Crowdy Head Quarry to the north crane wharf where loaded hoppers were lifted off their chassis into a punt. The punt was towed by steam tug to the spur wall work site, where, with the aid of a derrick and steam donkey engine, the stone was tipped where needed.

Ballasting of the south spur wall continued until late 1920 when 10,400 tons of stone had been tipped along the upstream face of the wall. Also during this period another 7000 tons of stone was tipped to raise the height of part of the northern training wall up to 4 feet above high water mark. These two jobs were finished up on 9 December 1920 and the works were then closed down.

In hindsight, closing the works down was premature. Storms in December 1921 again damaged the training wall, and it also appeared that the south spur wall had not achieved all its aims. Repair work resumed in February 1922; once more Crowdy Quarry was re-opened and sand cleared off the Harrington railway line. The remainder of 1922 was spent in raising the rest of the north training wall up to a height of 3ft 3in above the high water mark.

The next five years saw a sustained effort put into an enlarged spur wall project. By February 1924, a short 140 yard spur wall had been built out from the north training wall, orientated to line up with the south spur. It was an all-stone affair with 19,800 tons going into its construction. Like the south spur wall, it had no rail siding on it, stone being punted from the crane wharf and tipped in situ.

Construction activity then returned to the south spur wall. 50,000 tons of stone was tipped to strengthen the original wall and then to double its length, extending it to project over 420 yards into the river. Another initiative during this period was the construction of thousands of feet of timber fascine fencing on the sand dunes above the south bank of the river behind the spur wall. This was aimed at stabilising the sand dunes in the area, and while reasonably effective in the short term, the fences proved no match for the sand-shifting ability of winter gales.

The end of the line: 1927

The south breakwater, so necessary for the creation of a safe shipping channel into the Manning River, was never built. Sporadic breakwater repair work was undertaken during the Depression years, mainly for unemployment relief purposes, and in April 1940 the top of the northern breakwater was concreted to stabilise it.

The Depression years gave way to WWII. Regular shipping services to the river ceased in 1941 after many of the NCSNC coastal steamers were requisitioned for the war effort. By the time the post-war economy had recovered to a level where such a breakwater was affordable, declining trade to marginal river ports rendered them a poor investment for major capital works.

The railway to the quarry soon disappeared under encroaching sand dunes. The steam crane at Crowdy Head Quarry was kept in good order and painted yearly until it was sold in 1937. The crane and steam pumps at the quarry were then broken up for scrap, and the remaining stone trucks burnt to recover their iron fittings. The remaining rails on the breakwater walls were taken up, but only about a third of the line to the quarry could be recovered. The rest of it was too deeply buried under the dunes and remained there until Clutha mined the area for mineral sands in the late 1950s.



Above: The railway to Crowdy Head snaked its way along the coast behind the coastal sand dunes. For many years it was the only land link to Crowdy Head apart from a long walk along the beach. The area behind the line was covered by thick coastal rainforest before it was mined for mineral sands in the 1960s. **Left:** A 4-wheel settlers' trolley at the junction of the ocean breakwater and the training wall at Harrington in 1925. **Below:** The breakwater railway engine shed was located inside the small PWD Works Depot at Harrington. The track on the breakwater appears to have been lifted, and together with the general look of neglect indicate a date in the early 1930s. Photos: Manning District Historical Society Collection





Above: The cliffed quarry face at Crowdy Head. An idyllic place for a seaside picnic in summer, but it can be a hostile place during winter gales. Storm waves wash onto the quarry floor and sheets of blinding spray lash the cliffs.

Below: The South Spur Wall was built to concentrate tidal scour through The Narrows in an attempt to avoid incessant and costly dredging. The tree cover in the right background shelters the remnants of the aborted South Breakwater.

Photos: Ian McNeil





Above: The River Training wall extended some two kilometres upriver to Chinaman's Point. The sand bars in the middle distance mark the site of The Narrows, a shallow area of shoals where the PWD dredges battled endlessly to keep the shipping channel open.

Below: The Northern Breakwater was built out into deep water off-shore. Over the years sand build-up created a new shore line on the northern (left hand) side of the wall. The narrow shipping channel, scene of several ship-wrecks, ran along the right hand side of the wall.
Photos: Ian McNeil



The present day

Today (2011) Harrington and Crowdy Heads are popular coastal tourist destinations. Concrete paths have replaced the old railway lines along the tops of the breakwater and the training wall at Harrington, and these are now favourite venues for fishing, exercising and sight-seeing.

Few other traces of the railway now remain. The vertical cliffs of the old quarry face and a few heavily rusted rails at Crowdy Head are a silent reminder of busy times long past. The Coastal Patrol Rescue Station at Painted Rocks marks the place where the side of Flagstaff Hill was cut back to make room for the quarry railway to pass through.

Across the river, the aborted southern breakwater is a picturesque crumble and not easy to access. The southern spur wall is maintained in place but the northern spur wall is said to have been washed out by post-war river floods. The river entrance is still regarded as a dangerous place and river craft are strongly advised against attempting the passage.

Conclusion

The success of the Manning River breakwaters was probably summed up best by one-time premier of NSW, Sir Joseph Carruthers. On returning from a visit to the harbour works in June 1924 he said that:

He was very much disappointed at the results accruing from the vast expenditure of public moneys at the entrance. The river entrance seemed to be just as bad as it could possibly be. It was problematical whether it would have been any worse if no money had ever been spent on it. No blame could be attached to the engineers, because as a high authority once said: 'The man is not yet born who can effectively cope with drifting sand'.¹³

If the recommended southern breakwater had been constructed according to the engineers' plans, Sir Joseph's summary might have been very different. But despite this pessimistic summary, the Manning River breakwater walls

remain as a lasting testament to the ingenuity of the Victorian era engineers and to the hard work of the construction labourers. They blasted 600,000 tons of rock from Crowdy Head Quarry, railed to it Harrington and tipped it, 10 tons at a time, into the sea.

The walls are also a testament to the key role of the breakwater railway. To haul this huge tonnage of quarried rock, two small locomotives, *Tarry* and steam tram motor 33, steamed a combined 56,000 miles and made over 6000 return trips on the railway between Crowdy Head and Harrington. Quite an achievement, even by today's standards.

Acknowledgements

The assistance rendered by Arthur Cooper and Jack Vaughan of the Manning District Historical Society for generous access to their Society's resources is gratefully acknowledged. Thanks are also due to Bruce Belbin and John Browning for their assistance in the preparation of this history; to Jim Longworth and Peter Neve for the supply of historical photographs, and to Belinda Sheather of the Taree Lands Office, for access to historic survey plans.

References

1. *Manning River Times* 9 December 1899
1. *Sydney Daily Telegraph* 24 February 1900.
2. *Manning River Times* 20 June 1900.
3. *MRT* 22 October 1902.
4. *MRT* 5 March 1904.
5. *MRT* 5 November 1904.
6. Parliamentary Standing Committee, Completion of Harbour Works at the Entrance to the Manning River, 13 July 1910
7. *Sydney Morning Herald* 20 July 1912.
8. *MRT* 20 February 1913
9. NSW PWD Annual Report, Year Ending 20th June 1914.
10. N Chinn & K McCarthy, *NSW Tramcar Handbook 1861-1961 Part 2*.
11. NSW PWD Annual Report, Year Ending 30th June 1919.
12. Steam tram Motor repair card: Newcastle – Record of Overhauls, etc. No. 19, 10". (courtesy of Bruce Rankin).
13. *SMH* 19 June 1924.



An aerial view of the Manning River entrance after winter storms. The navigation channel alongside the breakwater wall is completely blocked by sand and the river has broken new exit channels through the washed-out remnants of the tip of Mitchell's Island. This is what the old PWD dredges battled against for years, and what the never-built southern breakwater was supposed to prevent.

Photo: GTCC



Located along a ridge on the southern flank of the Broken Hill, this is an aerial view of the Broken Hill South mine (dated 1967) looking east. In mid foreground, the South Road passes by the steel headframe of No.7 shaft (2,478 feet deep) which stands to the right of the obsolete timber headframe of No.4 shaft. The mine's branch line off the Silverton Tramway bisects the two. In mid centre, mill buildings can be seen while at top centre the "Central Power Station" building is visible with its attendant diesel fuel tanks. The township of South Broken Hill, once known as Alma, lies on the right of the photo.

Photo: Broken Hill South Collection

Beneath the Silver City: A long drive from Browne to No.7

by Ross Mainwaring

Introduction

Far western NSW is arid and sparsely populated. One place, however, stands resplendent amidst this vast isolation: Broken Hill, the 'Silver City', 1125 kilometres by rail west of Sydney.

Beneath Wilyu-Wilyu-yong (the aboriginal name for Broken Hill) lies the largest silver-lead-zinc mineral deposit yet discovered. During the early years of the 20th century, the metallurgists of the Broken Hill companies contributed to the development of the flotation process to extract zinc from the rich ore body. Sixty years later, Broken Hill South Limited was responsible for another mining icon – the development of the 2¾ mile 'long drive' on their mine's 1480-foot Level, linking their northern leases to the No.7 Shaft, located on the southern boundary of the property. This is the story of that significant feat of surveying and construction, together with the diesel locomotive that hauled the rake of ore cars deep beneath the 'Silver City' of Broken Hill.

Early history

In October 1844, the explorer Charles Sturt stood atop a 'grim, broken-backed ridge' during his epic quest of exploration to find the mythical inland sea. From this rocky outcrop on the southern fringe of the Barrier Range he

carried specimens of ore back to civilization. However, it was to be another 40 years before a boundary rider employed at Mount Gipps sheep station, Hieronymous Salvator Lopez von Pereira (alias Charles Rasp, a native of Saxony and a deserter from the Franco-Prussian War) discovered, in 1883, tin ore on the rocky eminence. This hog-back ridge, denuded of almost all vegetation except Mulga scrub, was known to prospectors from nearby Silverton, the principal town of the Barrier Silver Field, as the 'Broken Hill'.¹

On 5 September 1883, Rasp and two companions, Messrs Poole and James, pegged and registered a mineral lease. A syndicate of seven was duly formed from Mount Gipps Run employees, including George McCulloch, manager and part owner, so seven blocks, totalling nearly two miles in length, were applied for and registered along the line of the ridge. Prospecting revealed comparatively low grade carbonate of lead ore, but in early 1885 the shaft sinking contractor struck rich silver chloride ore in Rasp's shaft, assaying at thousands of ounces to the ton. It was decided to form a public company, to be known as 'The Broken Hill Proprietary Company Limited' (BHP) with a capital of £320,000 in 16,000 shares of £20 each, issued as paid up to £19.² From such modest beginnings the company has grown to become the largest mining enterprise in the world – BHP Billiton.

The belt of mineralization extends for 20 kilometres, running north to south, with the payable ore body extending over 7.5kms in length. The lode, a massive lead-zinc sulphide deposit up to 92m in width, outcrops at the location of its discovery, then plunges downward at each extremity of the field.

Broken Hill South Limited

The White and Maiden Leases (Blocks 7 and 8 of 40 acres and 29½ acres respectively) were situated at the southern end of the field. Block 7 was originally pegged by William, George and Charles Maiden on 7 August 1884, simultaneously with George White, a Silverton prospector who pegged Block 8.³ The Maiden brothers were publicans of the hotel at Menindee, which was situated on the banks of the Darling River, to the south east of Broken Hill. Their leases became known as the 'Great Bonanza'.

The three claims were sold to Mr Keats (a prospector-speculator) and party in May 1885 for £2,400, becoming the Broken Hill South Silver Mining Company Limited. Mr W H Morish, formerly of the Cobar copper field, was appointed manager. 100,000 £1 shares were issued and the first dividend of 6d was paid in January 1897.⁴

Eight shafts were sunk on the property and at the 525-ft Level the ore assayed 14 per cent lead, 18 per cent zinc and 14 ounces of silver per ton. In 1918 the Company was reconstructed, becoming Broken Hill South Ltd (BHS) and operating successfully throughout the ensuing years.

Safeguarding the future of the mine

Broken Hill South Ltd acquired the lease of the Sulphide Corporation (Block 9) and those of 'The Big Mine', BHP (Blocks 10, 11, 12 & 13), in 1940 and 1943 respectively, when these two pioneer companies quit the field with ore reserves seriously depleted. In 1952 a new company, Barrier Central Pty Ltd (a wholly owned subsidiary of BHS) was formed to work the former BHP blocks leaving Blocks 7, 8 & 9 with BHS.⁵ The ore from Central, later known as Kintore Shaft Section (the old Sulphide Corporation mine), which was essentially pillars and remnants, was transported underground by rail to No.7 shaft and raised for treatment at the BHS mill. The Company's leases now extended for 1½ miles along the Broken Hill line of lode.

No.7 Shaft had been sunk from 1926, on the southern boundary of the property as a replacement for the aging No.4 Shaft with its wooden head frame. The No.7 shaft had six compartments, two of which contained double-deck cages for men while another two were for raising ore in 5-ton, self-dumping skips. Semi-automatic skip winding, using a Ward-Leonard controlled Metropolitan Vickers 875hp electric winding engine, began in December 1931; electricity was conveniently generated next door at the 'Central Power Station' by Western NSW Electric Power Pty Ltd. This Sulzer Brothers (Switzerland) diesel plant was the largest of its kind in the southern hemisphere and had an output greater than any other diesel power station in the world at that time. From July 1931, the power station assumed responsibility for the supply of electricity and compressed air to all the mines on the line of lode, their own electrical generating plants being rendered redundant.⁶

During the late 1950s, diamond drilling from the 1000-ft Level in Delprat's Section of the old BHP mine revealed a previously known ore deposit, known as the Western Mineralisation, dipping at 60 degrees towards the western boundary of the lease. This zone lay to the west of the old BHP leases and had been of sub-economic grade when it was originally discovered by that company in 1913.

Drilling through hard sericite schist was costly and slow but the area would be accessible from the northern limit of the South Mine's 1480-ft Level, 3300ft from their No.7 Shaft. BHS management decided to advance this Level towards the mineralised zone for further exploration.

Development of the 1480 Level: Industrial relations

*Broken Hill suffers many conditions prescribed by the Mines Inspection Act, The Industrial Agreement and local custom.*⁷

Industrial relations issues had a significant impact on the development of the 1480 Level. Negotiations began in 1959 to extend the drive, and a conference was held between BHS management and the Executives of the unions involved, namely the Federated Engine Drivers and Firemen's Association (FEDFA) and the Workers' Industrial Union of Australia (WIUA). The first union included underground locomotive drivers, the latter, the miners.

Two industrial rules affecting underground transport were:

1. *Miners may truck only to the nearest track turnout or to 80ft from the face, whichever is the shorter.*
2. *Members of one union generally do not perform work covered by the other union, although the Industrial Agreement permits this under some circumstances.*

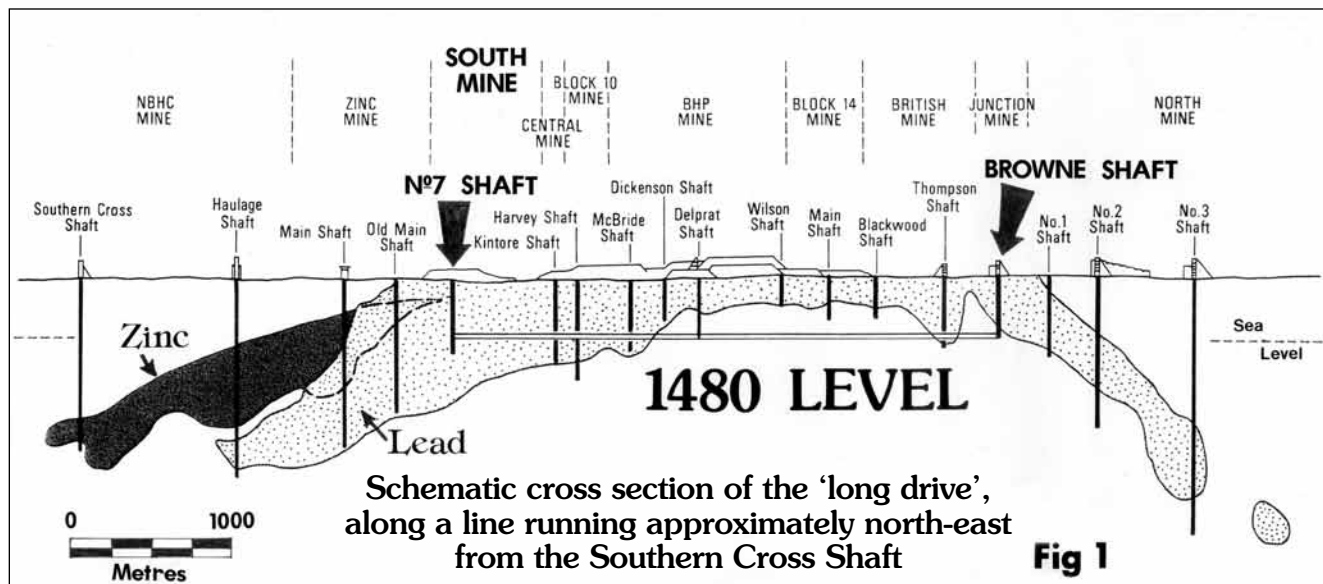
BHS management explained to WIUA that it planned to use four men at the working face of the 1480-ft Level extension, one of whom possessed an electric locomotive driver's ticket. The trucks were to be pulled by a loco to a convenient loop, *irrespective of distance*, overriding Rule 1.

Discussions were concluded to the parties' mutual satisfaction, FEDFA agreeing to a WIUA member driving the battery loco. This arrangement was strictly confined to the 1480 Level drive only and BHS management wrote to both unions confirming the agreement on 2 March 1959.⁸ However, this decision was to have unforeseen repercussions in the not too distant future for FEDFA members working at other Broken Hill mines.

Previous rates of face advance at BHS were from 40ft to 80ft per fortnight but the new agreement permitted an advance of 150ft per fortnight. Management stressed that this increase would benefit all South Mine employees and most probably improve the prospects for the Silver City's future.

The work crews were carefully selected and the importance of the project was fully explained to each man. Seven men working three 7-hour shifts per day five days a week was the agreement. Work began on 16 March 1959.





Development of the 1480 Level: Blasting the way.

The engineering staff determined the optimum dimension of the drive to be 9ft 6ins high by 8ft wide at track level. The roof width was an extra 12ins to accommodate the ventilation tubing. A rail track gauge of 24 inches suited the battery locomotives, 55-cubic ft Granby cars and Eimco 21 loader which were already in use elsewhere in the mine.⁹

Work progressed rapidly; at the completion of each loading cycle, a trucker (FEDFA member) extended the compressed air main, water main and ventilation tubing by 15ft.

At the commencement of the job, four Granbys were used but this was increased to six when, after two months progress, a run round loop was cut. The Mines Inspector concurred with six cars without a brakeman as long as the loco was pulling the rake. A precedent had been set for this practice when in 1950 agreement was finalised for an isolated stope on the Kintore boundary to be served by a loco pulling a rake of 12 box trucks. There was only the loco driver on the rake; the brakeman (or filler) remained at the chutes to load the other trucks.

A dispute arose over the trucking practice on 15 March 1960 when WIUA insisted on a brakeman riding with the six Granbys, which was not part of the original agreement. In a late afternoon telephone conversation with Alan Dutton (Underground Manager) the Executive was adamant. A conference was called for the next day. However, in Dutton's words ... *In the meantime, the bosses were advised not to issue instructions on the question to the truckers, because after investigation, it was found that the loss in the effective working time in the drive, if the brakeman were used on the train would amount to less than three man minutes per shift.*¹¹

Speaking at the conference next morning, Mr L Johnstone (WIUA) said it was the Executive's understanding that two men would be used on the train, a condition that the Union would never, he reiterated, be prepared to give away. After much discussion the Underground Manager remarked ... *that where there are two contradictory stories and two conflicting interpretations of an arrangement it was difficult to reach agreement or even compromise, but he would arrange for a brakeman to work on the train while all aspects of safety were being investigated.* Management reasoned that the loss of three man minutes a shift was inconsequential; they wanted the job done quickly and without disputation.¹²

On 15 July 1960 the face, which now lay deep down below Crystal Street halted after an advance of 3776½ feet. However, the expectation of developing new ore reserves proved a disappointment.

Production ended in the Kintore section of the Central Mine and the Delprat section of the old BHP mine in 1960.¹³ As a means of bolstering the dwindling BHS ore reserves, on 27 October 1961 an agreement was reached with North Broken Hill Ltd to transfer their British Mine and Junction leases to BHS in exchange for 450,000 shares of 5s each in BHS. This acquisition became known as 'Browne Shaft Section'.

The British Mine leases, Blocks 15 & 16, had been worked by the British Broken Hill Co, registered in November 1887 to acquire them from BHP.¹⁴ The British Broken Hill mine was acquired by North Broken Hill in 1923.¹⁵ The Junction leases, originally known as 'Great Northern Junction' (Blocks 39 & 40) had been pegged by Messrs Penglasse and Carson in 1884.¹⁶ The mine and leases were sold to The Sulphide Corporation in 1923 who in turn sold them to North Broken Hill Ltd in 1929. Browne Shaft, sunk in 1886 and named in honour of Sylvester Browne, a Company Director, was the main access to these underground workings.



Looking north along the 1480 level in the British-Junction section, not far from Browne shaft. 2ft gauge track was laid along the drive for 2¾ miles from No.7 shaft, but a third rail of 15-in gauge was necessary from Browne shaft to the point of breakthrough so as to carry the 11 cubic feet box trucks, which were the largest size that could enter that shaft's small gate. Photo: Author's collection

Development of the 1480 Level: Browne's Section

After detailed studies, it was decided to extend the presently stopped 1480 Level drive to meet up with a drive to be extended from Browne Shaft (see Figure 1). This scheme was chosen for three reasons. It would allow effective exploration of the Western Mineralisation between Delprat and Browne shafts on the 1480-ft level and also provide easy access to sites for drilling below this horizon. It involved no major changes to the existing shaft, winder or head frame, and the new drive would lie below the known ore reserves in the British-Junction leases.¹⁷ It was planned to use locomotive haulage to move the ore from Browne's to No.7 Shaft.

The unions were again approached and they proved agreeable to the planned 6200ft extension to the drive being worked under the previous labour agreement.

One problem was Browne Shaft. It was only a small box-timbered opening in which the cage could carry one 10 cubic ft box truck or four men. This shaft had to be deepened by 80ft and a new plat cut at the 1480 Level to permit work to begin from that end. Driving began here on 25 June 1962 using Eimco 12B loaders filling 15ins gauge, 10 cubic ft box trucks.¹⁸

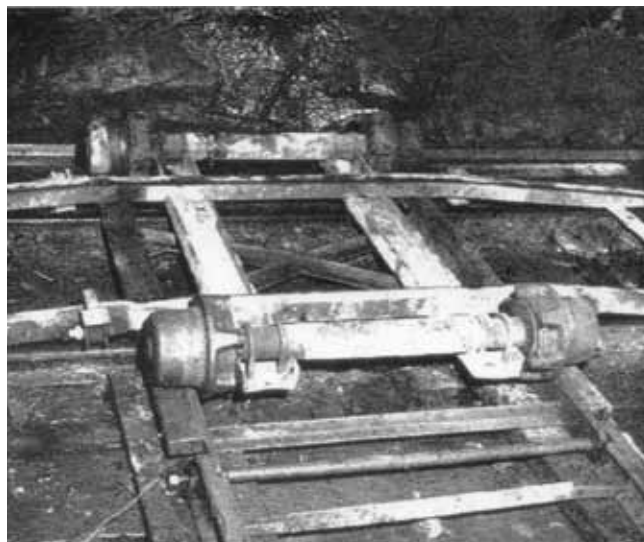
Development of the 1480 Level: Rail operations

As previously mentioned, the track gauge in the South end of the drive was 24ins. At the work face, temporary welded track in 7ft 6ins lengths was laid by the miners to carry the four wheel boring platform, on which was attached a 'drifter' drill mounted on a 'jumbo' rig. A boring pattern of 40 holes per round was drilled; around 90,000 holes were bored in total.

During the boring cycle, platelayers replaced the temporary track by 15ft lengths of 30lb rail and wooden sleepers. At the track joint, special overriding joining pieces were used to prevent damage by truck or locomotive wheels. Brush Box timber sleepers were used at first but their use was discontinued when splitting of the ends became apparent. Permanent 45lb rail and precast concrete drains were laid to within 60 feet of the face. The attention to drainage was most important to reduce the level of humidity; if the wet bulb temperature rose above 80 degrees Fahrenheit (the rock temperature was 83 degrees F), the working shift was reduced to six hours. Ventilation air, from Kintore and Delprat shafts, was blown along ducting to the working face. Temperatures here averaged 75 degrees F.¹⁹

The gradient of the drive for the first phase was 1 in 200 but for the new extension this was reduced to 1 in 400 in favour of the load. The centre of the face and gradient line were marked with white paint by the shiftboss to guide the miners when drilling.

After blasting, the face was cleaned up by an Eimco 21 loader. A traverser trolley was used



Transfer trolley, or traverser, used for by-passing of trucks near the face of the 1480-ft level drive. This design was modified from that used in a South African gold mine and avoided having to lay passing loops for full and empty trucks.
Photo: Author's collection

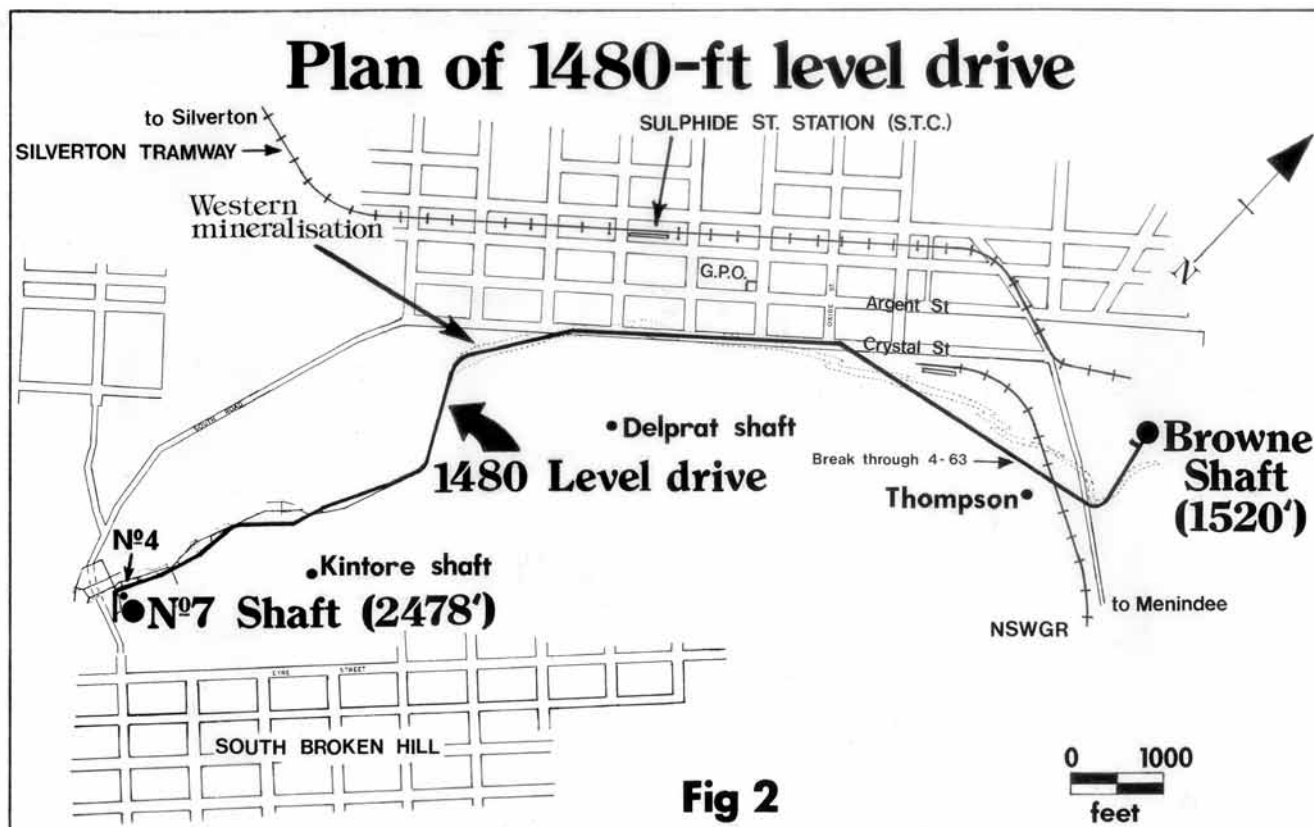
to speed up the loading cycle. Small excavations, or cuddies, were blasted out every 150ft in country rock or 100ft in the lode, into which the compact traverser was accommodated. An empty truck could by-pass a full one pushed aside in the cuddy. This arrangement saved stripping the side of the drive to accommodate passing loops.²⁰

When the Granby trucks were full, a 3-ton battery loco pulled away a rake of five or six trucks and ran to a waste pass, where the rock was tipped down to the 1630 Level. During night shift, this stone was trucked to No.7 shaft for hoisting. Each face advanced about 15ft a day and the cost was given as £43 per foot; of this amount, rails, sleepers and drains accounted for a cost of £1 per foot.

As an experiment, a booster compressor was trialled which increased air pressure for the rock drills and loader at the face from 78psi to 95psi. This move was resisted by the Union but



Pedal power transport on the 1480: Two bosses off on their tour of inspection. Mr. Jock Anderson (Shiftboss) has the front seat while Mr Ron Carroll (Foreman) sits behind.
Photo: Broken Hill South Collection



a benefit, unfortunately not to be realised, was the reduction in time for an Eimco to fill a truck — down from 3.2 minutes to 2.7 minutes, thanks to that extra 17psi.²¹

To transport the men, two man cars were built on Granby truck chassis. These were pulled by a battery loco, saving each man 45 minutes travelling time each shift. For the transport of staff, a two-man quadricycle was built in the workshop. This vehicle was proportioned to fit into the shaft cage; it was built from steel tube pipe and was fitted with two plough type metal seats.

Another quadricycle was built from one-inch tubing but this was so heavy that it needed the muscle of four men to lift it. Propulsion was by antique "chaff cutter" type chain, driving a sprocket on an axle. Originally the wheels were 12 inch bicycle rims with a railway profile tyre attached, but the vehicle's weight far exceeded the strength of the spokes, with the inevitable result. Solid rims were then substituted. Refinements, such as brakes, were not fitted. It was an eight minute ride from No.7 shaft to the working face.

The drive broke through on the night of 19 April 1963, having advanced a further 4404 feet, approximately 2000 feet from Browne Shaft. The best fortnight advance was 165 feet, which was more than double the usual footage of the South Mine.²² 77,000 tons of rock had been excavated. After the breakthrough, the 2ft gauge track was temporarily extended towards Browne shaft, providing dual gauge trackage in this section of the drive (see Figure 2 above and photo on page 17).

It was decided to use a diesel locomotive on the level so BHS requested approval from the WIUA for men to work weekend overtime in stripping and widening the drive. In those days, overtime was very strictly controlled, to share work fairly amongst the men. In reality, the Union seldom refused a request. Anticipating the increased weight of a diesel locomotive and Granby cars, the track was regauged to 3ft 6ins using 45lb rail. About 180 tons of 45lb rail was used, fastened to 5400 hardwood sleepers laid down throughout the length of the drive.²³

Development of the 1480 Level: Not forgetting the surveyors!

*Grinning goblins dance and grimace,
Ugly ogres sneak and creep,
Tommy knockers rap my headboard,
All disturb my troubled sleep.*

*Worried dreams are filled with pictures,
Crooked lines that never meet,
While those imps of Satan mumble
Incantations of defeat.*

*Do their antics have some meaning?
Are my dreams a grim forecast
Of some error in my figures
Which may haunt me from the past?*

*For a tunnel may be driven
Up or down and roundabout,
But if headings missed each other,
Engineers would soon lose out.*

*Hard rock miners man the jumbos,
Tough machines gnaw out the rock:
Work like badgers 'neath the mountain
All the hours around the clock.*

*So while North goes south on tangent,
And South heads north just as true,
Nights and days will all be troubled
'Till the miners "hole 'er through!"²⁴*

The challenge presented to the survey team, working under Chief Surveyor FA Newton was that ... *water would gravitate from Browne Shaft to No.7 Shaft along concrete drains laid on a grade of 1 in 400... calculations revealed that the maximum allowable error was 3-in ...*²⁵ The aim was for a maximum error at breakthrough of 12 inches.



Underground staff proudly posed for the camera at the breakthrough location of the 1480-Level drive. Left to right, back row: Mr. JD Copley (Senior mining Engineer), Mr. RAC Carroll (Foreman), Mr. DK Dow (Asst. Underground Manager), Mr. JJ O'Neill (Asst. Underground Manager – Planning), Mr. FA Newton (Chief Surveyor). Middle row: Mr. L Campbell (Shiftboss), Mr. W Rhone (Cadet Surveyor), Mr. AR Parr (Senior Surveyor), Mr. JK Ballinger (Senior Surveyor). Front: Mr. A Kersten (Development Foreman), Mr. AH Dutton (Underground Manager).

Photo: Author's collection

The survey work involved five shaft plumbings and 78 theodolite stations. When the faces were 100-ft apart, a diamond drill put through from the South end located the Browne section face. A short reverse curve of 200-ft radius was all that was needed to connect the two ends, which broke through at 10.45pm on Friday 19 April. There were congratulations and handshakes all round. The total length of the transport drive was 13,500 feet, the longest single drive on the field.²⁶

Total traverse distance of the survey was 28 440 feet (surface, shafts and underground). A transverse error of 4.71ft and longitudinal error of 0.41ft was evident but levelling closed to 0.03ft, so Newton concluded ... *The accuracy of the final breakthrough, although not to the desired standard, was sufficient to complete the connection without inconvenience and added cost.*²⁷ Nevertheless, this feat was still most impressive as it involved four 200-ft radius curves and a gradient profile of 1 in 400.

A stable of 'electric mules'

*To relieve the burden on man himself, there first came into use the mule and horse, then the trolley wire electric locomotive followed by the storage battery locomotive...*²⁸

During 1902 the Proprietary Mine (BHP) installed a 220 volt DC electric trolley wire system, with plant supplied by Messrs Thomas Parker Ltd of Wolverhampton, England. A 15hp electric locomotive, capable of handling 25 tons (or from 20 to 25 trucks) at 5mph was trialled on a surface tramway, replacing the horses engaged in hauling tailings from the mill to the dump.²⁹

Meanwhile, approximately 5500 feet of 18 inch gauge track was laid underground on the 650-ft Level, running from Delprat's shaft towards the lease boundary with Block 10. When this trolley wire installation was finished the

locomotive was sent below, becoming the first such system underground in any mine in NSW. Horses, capable of only pulling about five trucks, had fallen out of favour ... *the horses generally have a very bad time underground, make a mess of the track, and foul the air of the workings.*³⁰ Operations continued here for a short time only before the locomotive was returned to the surface to resume its work hauling tailings from the mill.³¹ It would appear that the new loco was really too big for the work asked of it; clearance in the drives and heavily-timbered workings was limited. The 650-ft Level then reverted to the tried and true – horse haulage for the movement of ore.

From this faltering start two traditional forms of locomotion ruled the subterranean drives and crosscuts of the mines at Broken Hill for many years – horse power and man power. Both types were expensive and inefficient, both types needed their dietary requirements to be imported long distances by railway. The cost of horse feed, especially in times of drought, was enormous.

A solution to the underground transport problem was readily available from overseas in the form of the storage battery locomotive, known colloquially as an 'electric mule', or simply, a 'mule'. This metallic mule's 'diet' was basic and relatively inexpensive — only water, battery acid and a little oil or grease.

1938 produced two notable firsts for the townspeople and miners of Broken Hill. Firstly, the NSWGR brought into service their inaugural air conditioned diesel train, the *Silver City Comet*, which ran 442 miles from Parkes to Broken Hill, and secondly Broken Hill South introduced a British-built 3-ton storage battery locomotive of 24 inch gauge by Greenwood and Batley Ltd. This unit, the first at any of the mines, was put to work on the 1270-ft Level, displacing the horses.³² An American idiom, 'mule', was bestowed upon this

new British built locomotive and naturally enough the man in charge of this machine was known as a 'mule driver'. To cater for this new occupation, the Broken Hill Technical College began courses for Electric Engine Driver's Certificates in August 1938.³³

At the conclusion of the Second World War, another British manufacturer, Wingrove and Rogers Ltd, supplied three 15 inch gauge storage battery locomotives to BHS. The 'electric mules' hauled either box trucks of 16- or 20-cubic ft capacity or Granbys of 55-cubic ft capacity, from the stope chutes to an ore pass, where the truck was weighed before tipping. Box trucks were end tipped while Granbys tipped automatically from an opening side door.

In later years, the normal tonnage for a 15 inch gauge 1-ton loco was five 1-ton trucks. A 3½ ton loco on 24 inch gauge could pull 12 1-ton trucks or four 4-ton Granbys, while a 24 inch gauge 8-ton Goodman loco managed 12 Granbys.³⁴ As the old upper levels of the mine became worked out, 15 inch gauge 'mules' were converted to 24 inch gauge.

During 1950, eight 3½-ton 2 foot gauge storage battery locomotives were ordered from a Sydney engineering firm, Standard-Waygood Ltd.³⁵ This company had its genesis in 1903 when the Standard Electric Elevator Co. Ltd was registered. In 1909 it amalgamated with Waygood Ltd to become Standard-Waygood Ltd. In 1913 this firm amalgamated with Hydraulic Engineering and Hercules Ltd, becoming Standard Waygood Hercules Ltd. The company later entered into arrangements with the English Electric Co Ltd of London, becoming the English Electric Company of Australia Ltd in 1920.³⁶ During 1927 the company name again reverted to Standard-Waygood Ltd.³⁷

Local manufacture of these locomotives was preferred because delivery time from the UK was well over 12 months;



The first storage battery locomotive to be put to work at Broken Hill South was a 24 inch gauge Greenwood and Batley 3-ton unit. Pictured here, the 'electric mule' is hauling a rake of Granby cars. The 'mule driver's' cockpit offers minimal protection.

Photo: Author's collection

the effect of wartime austerity on industry was still to be overcome. These units were to operate at Delprat's and No.7 shaft sections with two locos held in reserve. This influx of locomotives allowed the hard working horses on the 1940-ft Level to finally retire during November 1950, thereby bringing to an end horse haulage at the South Mine.



A 24-in gauge Goodman storage battery locomotive on a rake of Granby cars underground at the South mine. The 'mule driver' has his right hand draped around the brake hand wheel. This 8 ton, 38hp American built locomotive worked the subterranean mainline drives and crosscuts of the mine.

Photo: Courtesy of a private collection, Broken Hill

Dr Diesel's successor to the 'electric mule'

1951 saw the introduction of two 6-ton Ruston and Hornsby diesel locomotives, type 40DLU, the first locomotives with internal combustion engines working underground at Broken Hill. The pair were purchased by the Zinc Corporation, and put to work hauling 2ft gauge 66-cubic ft Granby cars on the 13 Level serving the Freeman Shaft.³⁸ This mine, known for its progressive approach to mining matters, adjoined the BHS southern boundary.

During the final months of 1962 BHS reviewed its locomotive requirements for the 1480 Level, and in view of the success of Zinc's diesel locomotives decided upon a 10-ton, 42-inch gauge locomotive, capable of hauling up to 14 120-cubic ft Granby cars carrying seven tons of ore. An order was placed with Commonwealth Engineering Queensland Pty Ltd whose factory was at Rocklea, 13km south of the Brisbane city centre.³⁹

NSW Mines Department regulations governed the use of diesel locomotives in metalliferous mines. Amongst the more important of these were:

1. Diesel locomotives may be used only in main haulage levels where through-ventilation is established and where the quantity of air passing the locomotive while in operation shall not be less than 6,500 cubic feet per minute.

2. Servicing may be carried out underground at a station approved by an inspector, provided that the current of air passing through such station shall not be less than 6,500 cubic feet per minute.

3. The exhaust gases of the locomotive shall be analysed once in every four weeks and should the carbon monoxide content be found to exceed 1.5 parts per thousand, the locomotive shall not be used until the quality of the exhaust gases has been brought within the limit above specified.⁴⁰

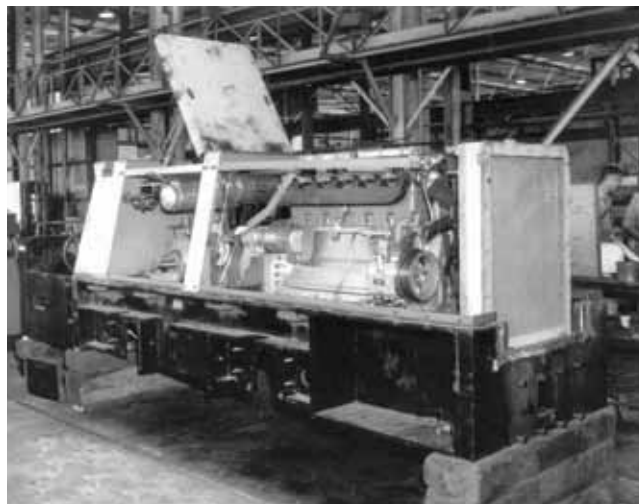
Negotiating with the Unions

At a special general meeting of the WIUA Executive on Saturday 25 May 1963, BHS management requested approval for one-man operation of the 1480 Level ore train. *This man shall be called upon to fill the trucks on a train that will carry approximately 110 tons of ore, he will drive the train to the South Mine along the 1480 drive, he will then weigh the dirt, tip it and return for the next load... He will be using the press button electronic control to do most of these jobs.*⁴¹ Not unexpectedly, the Company's request was refused and a meeting was convened with the FEDFA Executive for discussions. Both union Executives were united in their refusal.

The following week an Executive meeting with BHS management was convened and an agreement was reached that two men would be employed on the train. However, BHS retained the right to re-introduce this matter at a later stage. The Executive stated *this was carrying out past practice, but they felt that the two men would always be necessary to operate the train successfully.*⁴² The status quo remained firmly in place!

The new locomotive arrives

The new Commonwealth Engineering (Comeng) diesel locomotive arrived on the BHS property during February 1963. On the same day as the 3ft 6ins gauge Silverton Tramway Company worked the biggest narrow-gauge train ever to run on Australian rails⁴³ (4500 tons pulled by three of their new Goodwin-Alco diesel-electric locomotives from Broken Hill to Cockburn), the *Barrier Daily Truth* newspaper featured a photograph and description of the much smaller diesel locomotive of identical gauge that, unlike its larger brethren travelling across the sunburnt outback, would forever run in the stygian darkness far beneath the red sand and spinifex of 'The Silver City'.



Top: The partly finished BHS loco supported on wooden blocks in the Commonwealth Engineering, Rocklea plant, Queensland. The gearbox for the chain drive is seen above the farthest axle, situated front of the Gardner 105hp, six cylinder diesel engine. The radiator is prominent at the front end.

Centre: The completed 42-in gauge Comeng locomotive (KA1061 of 1962) in the yard at Rocklea, Brisbane, with roof inspection doors open. The driver's cockpit was of generous proportions but a protective cab roof was later fitted by the mine staff.

Above: The future poses before the past. Positioned in front of a new steam locomotive tender at the Rocklea plant, the completed Broken Hill South 10-ton diesel locomotive stands resplendent, highlighted by the black and yellow zebra stripes front and rear.

Photos: Author's collection



Top: While the Comeng diesel loco waits before No.7 shaft, the riggers are manoeuvring a short length of prefabricated track supported on a rail trolley. The track will be lifted by an overhead crane, ready to be pushed into position above the shaft opening. The loco will be moved onto this section of track, preparatory to be raised to have both wheel sets removed for lowering down the shaft.

Centre: The track section has been lifted by the crane, turned sideways and is being guided into position across the shaft opening, where it will be re-laid temporarily. Note that the driver's cockpit section has been removed for shaft clearance purposes.

Above: In the foreground sit the wheel sets from 'the Comeng', which is suspended by the shaft rope above the opening. The riggers are raising the temporary prefab' track by block and tackle, prior to slewing it out of the way, so the loco can be lowered down the shaft.

Frames from 8mm cine film courtesy Mrs A Fairweather

On Saturday, 25 May the loco was lowered down the No.7 Shaft — a slow, time consuming process. Before this was done, a shaft inspection was carried out to make sure that no stones were lodged on the shaft timbers, as clearance for the chassis would only be a bare minimum. Fortunately the Manager, Don Fairweather, was an avid photographer and he captured the day's activities on 8mm colour cine film.

One shaft skip was detached from the rope in preparation. Under the watchful eyes of the Underground Manager, John Treloar, and Don Nixon, Underground Mechanical Maintenance Foreman, who was in charge of proceedings, the loco was lowered by crane from a truck onto a length of temporary track laid in front of the shaft. The driver's cockpit was unbolted from the locomotive and set aside for the time being.

A short length of 42 inch gauge track was dogged to wooden sleepers and manoeuvred into position by the riggers, known locally as a 'sailor gang', using a block and tackle mounted on an overhead crane runway above the shaft opening, which was protected by steel rails. This length of track was fishplated to the length that the loco was standing on. The diesel was then pushed in towards the shaft. The locomotive's axle horn bolts were unscrewed, then chains on the loco were attached to the hook on the shaft rope. Acting under instructions, the bracman signalled the winding engine driver by bell, slowly raising one end of the loco to release a wheelset which was rolled out along the rails. The shaft rope was well able to handle the weight of the chassis; the 4.38-inch circumference wire rope had a breaking load of 119 tons.

After much manoeuvring, the other wheelset was removed and the loco chassis was lifted well clear of the shaft collar to allow for removal of the temporary track. The shaft opening was then uncovered and the loco chassis, motionless above the black abyss, absorbed the warmth of the late autumn sun for the very last time before being very slowly lowered down to the 1480 Level.⁴⁴ This was to be its place of employment for its entire working life. Even with the wheels removed, clearance in the shaft was very tight, five eighth of an inch. Steady as she goes!

Preparations at the 1480 Level plat had been made to receive the new loco. During the preceding week a lip of rock in front of the shaft opening was blasted away to gain more clearance. Even so, at the last minute a length of timber was found to be cramping clearances so the shaft timber men were summoned to remove the offending piece.

A big block and tackle pulled the chassis from the shaft which was then lowered onto 24 inch gauge jockey wheels. It was then pushed along to a section of 42 inch gauge track where the chassis was jacked up, the temporary wheels rolled away, and the proper wheelsets rolled into place. Roof bolts were put into the rock here to support a block and tackle. The chassis was then pushed to the workshop where there was the luxury of an inspection pit. Reassembly took place over several days.

A successful trial run was carried out on 18 June under the watchful eyes of officials.⁴⁵

Trucks to carry the ore

The ore truck of choice was a Canadian invention — the Granby car. Rosebery, situated on the west coast of Tasmania, boasted an Australian first when Granbys were introduced into the Electrolytic Zinc Company's silver-lead-zinc mine during 1931 (see *Light Railways* No.185). Six years later these cars made their appearance at Broken Hill and the first mine to try them was BHS. The cars gradually replaced the ubiquitous 17-cubic feet box truck. With the introduction of

new mine car loaders in 1936, the days of the hand pushed or horse hauled box trucks days were numbered.

The 1480 Level was to use four-wheel 120-cubic ft Granbys, holding seven tons of ore, a marked increase in capacity over their precursors of only 38 cubic ft. Plans were drawn up in the BHS drawing office but construction was by an outside engineering firm, possibly Perry Engineering of Adelaide in which BHS held shares at one time. Over the weekend of 6–7 June, the new cars were disassembled, placed on trolleys, and then lowered down No.7 shaft.

Air brakes were fitted to some Granby cars as it was intended to run 14 cars in a rake. The Mines Inspection Act laid down that *Unless otherwise provided in writing by an Inspector of Mines, the locomotives, when hauling or pushing trucks underground, shall at all times be situated at the down grade end of the job.*⁴⁶ Strictly speaking this was applicable to 1480 but a further regulation stated ... *When pushing Granby trucks underground, if the front of the rake is not at all times visible to the driver, a brakeman shall travel in the front truck.* It was not practicable to conform to this regulation as the rake was 160 feet in length. Continuous air brakes were acceptable to the Mines Inspector so four trucks were fitted with brake equipment, but in later years it fell into disuse.

Rubber blocks were located above the wheels and these acted as buffers to absorb the shock of a heavy load of ore rushing into the car that could otherwise possibly bend the axles. These blocks proved difficult to renew as slush dripped onto the rubber, requiring a fitter to chisel them out.

The Company Directors' tour of inspection

The Granby cars were built with semi-automatic couplings, using 1-inch diameter figure eight chain that fitted into a slot in the coupling, into which a pin was dropped. A safety chain was attached to these pins. Very soon it was discovered that the cars' coupling height was incompatible with that of the diesel, so the locomotive's coupler pocket was raised to suit.

This error caused consternation when it manifested itself just prior to a visit by the Melbourne Directors of BHS. The first diesel driver, Frank Martinovich, seated in comfort upon hessian sacks, was tutored by a shiftboss on how to drive. Frank, an old experienced hand who was once a trucker, suggested a simple solution to the coupling problem — wrap a 'nip chain', normally used for snagging timber into a stope, around both couplings. The Directors, with Frank at the controls of the new diesel, were oblivious to this makeshift arrangement when they safely journeyed from Browne's to No.7 on their tour of inspection. Along the way, a rail broke under the weight of the passing train and had to be quickly replaced.⁴⁷

Full rail haulage operations began on 1 July 1963.⁴⁸ BHS had spent £1,100,000 on the exploration and development of the Western Mineralisation, £372,193 at Browne Shaft Section alone. In October, mining costs were given as 128s a ton on a daily output of 1511 tons.⁴⁹ The Company's books showed a net profit of £976,989 for the year ended June 1963.⁵⁰

To be concluded...

Glossary

Cage: Enclosed steel platform used in a shaft to carry men and equipment.

Country rock: The rock within which a mineral lode occurs.

Crosscut: A roadway driven at an angle to the main tunnel.

Drive: Tunnel following the ore body.

Flotation: An ore concentration process that takes advantage of the principles of surface tension and colloid chemistry.

Level: A horizontal passage in a mine.

Mullock: Waste or refuse rock.

Ore body: Generally a solid and fairly continuous mass of ore.

Plat: The floor of a level near its intersection with a shaft.

Skip: A large container used in a shaft for the hoisting of ore or rock.

Stope: An underground excavation from which ore is extracted.

Sulphide: A compound of metal and sulphur.

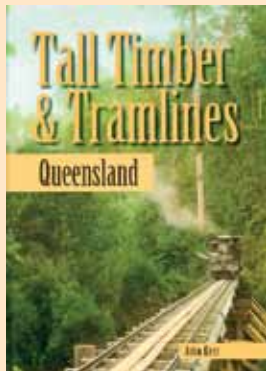
Winze: An incline shaft down from a level.

References

1. *The B.H.P. Review* – Jubilee Number, BHP Ltd., June 1935.
2. *The Australian Mining Standard*, 28 August 1905, p. 175.
3. Carroll, Brian; *Built on Silver – A History of Broken Hill South*, 1986.
4. *The Mines and Minerals of New South Wales*, Australian Mining Standard, 1906.
5. Broken Hill South Ltd and Barrier Central Pty Ltd, Operations at Broken Hill, 1960.
6. The Central Power Station plant included Part A: six Sulzer Brothers 3000bhp two stroke diesel engines, each coupled to a British Thomson-Houston A/C generator and Part B: four Mirrlees, Brickerton and Day (UK) 1200bhp four stroke diesel engines each coupled to a Bellis and Morcom air compressor (95psi) for the line of lode mines. *Industrial Australian and Mining Standard*, 1 January 1933, p. 361.
7. The Australasian Institute of Mining and Metallurgy, Proceedings, March 1965, No.213.
8. *ibid.*
9. *ibid.*
10. University of Melbourne Archives, Broken Hill South Ltd, Box 346, letter dated 16.3.1960.
11. University of Melbourne Archives, Broken Hill South Ltd, Box 346, Letter dated 16.3.1960.
12. GH Woodward, 1965; *A Review of the Broken Hill Lead-Silver-Zinc Industry* p.131
13. The History of Broken Hill: Its rise and progress., Fearson's Printing House, 1908.
14. GH Woodward, 1965; *A Review of the Broken Hill Lead-Silver-Zinc Industry* p.3
15. The History of Broken Hill: Its rise and progress, Fearson's Printing House, 1908.
16. The Australasian Institute of Mining and Metallurgy, Proceedings, March 1965, No.213.
17. *ibid.*
18. *ibid.*
19. *ibid.*
20. *ibid.*
21. *ibid.*
22. *ibid.*
23. *The Conveyor*, Zinc Corporation, May-June, 1963.
24. 'Nightmare of an Engineer' by CF Thomas, Zinc Corporation, *The Conveyor*, January 1948.
25. The Australasian Institute of Mining and Metallurgy, Proceedings, March 1965, No.213.
26. *ibid.*
27. *ibid.*
28. *Underground Haulage with Diesel Locomotives*, Zinc Corporation, *The Conveyor*, September 1946.
29. *The Australian Mining Standard*, 13 February 1902, p. 227.
30. *The Australian Mining Standard*, 21 August 1902, p. 263.
31. Blainey, Geoffrey; *The Rise of Broken Hill*, 1968; NSW Department of Mines, Annual Report 1902 and 1903, p. 43.
32. NSW Department of Mines, Annual Report 1938, p. 22.
33. *Barrier Daily Truth*, Broken Hill newspaper, 3 August 1938, p. 3.
34. Broken Hill South Ltd and Barrier Central Pty Ltd, Operations at Broken Hill, August 1956.
35. Broken Hill South Ltd, No.33 Reports and Statements of Accounts, Year ended 30.6.1951.
36. *Hardware and Machinery*, 4 June 1923, Volume 38, p. 208
37. *Australasian Electrical Times*, 27 May 1927, p. 358.
38. *ZC Mining Review*, Zinc Corporation, *The Conveyor*, December 1951.
39. Dunn, John; *Comeng: a history of Commonwealth Engineering, Volume 2: 1955 – 1966*, 2008.
40. *Underground haulage with Diesel Locomotives*, Zinc Corporation, *The Conveyor*, September 1946.
41. *Barrier Daily Truth*, 27 May 1963, p. 10.
42. *Barrier Daily Truth*, 20 June 1963, p. 13.
43. *Barrier Daily Truth*, 28 February 1963, p. 3.
44. Personal interview with Mr Don Nixon and Mr Fred Smith.
45. *Barrier Daily Truth*, 19 June 1963, p. 1.
46. *Barrier Daily Truth*, 12 November 1965, p. 15.
47. Telephone interview with Mr Frank Martinovich.
48. *Barrier Daily Truth*, 19 November 1963, p. 6.
49. University of Melbourne, Archives, Broken Hill South Ltd, Box 419, Manager's reports.
50. University of Melbourne, Archives, Broken Hill South Ltd, Box 978, History file.

New from LRRSA Sales ...

Tall Timber & Tramlines Queensland



By John Kerr

Published by the LRRSA.

Describes all Queensland timber tramways known to the author.

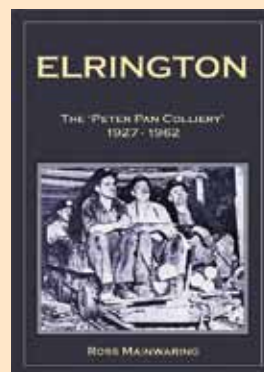
Soft cover, 104 pages, A4 size
90 photographs, 28 maps and diagrams,

References, bibliography, and index.

Price \$29.95 plus postage
(\$22.46 to LRRSA members)
Weight: 520 gm

Elrington

The 'Peter Pan Colliery' 1927 — 1962



By Ross Mainwaring

Published by the LRRSA.

A coalmine and its railways near Cessnock NSW, established by the BHP in 1927.

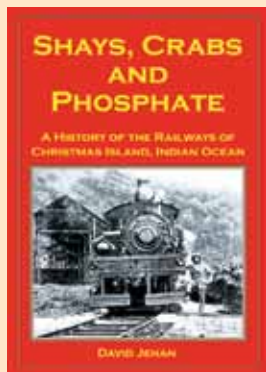
Soft cover, 96 pages, A4 size
64 photographs, 9 maps and diagrams,

References, bibliography, and index.

Price \$25.95 plus postage
(\$19.46 to LRRSA members)
Weight: 460 gm

Shays, Crabs and Phosphate

A History of the Railways of
Christmas Island, Indian Ocean



By David Jehan

Published by the LRRSA.

Soft cover, 136 pages, A4 size

Over 160 photographs, 14 maps
and diagrams,

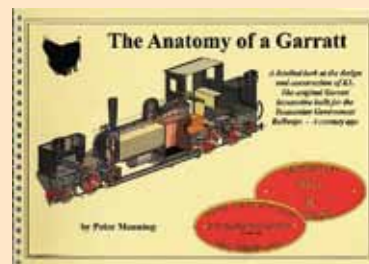
References, bibliography, and index.

Price \$33.00 plus postage
(\$24.75 to LRRSA members)
Weight: 700 gm

The Anatomy of a Garratt

A detailed look at the design and construction of K1.
The original Garratt locomotive

Published by Peter Manning Design & Drafting



64 pages, A4 size
landscape, card cover
spiral bound, about
350 illustrations.

Price \$39.95 plus
postage
(\$35.96 to LRRSA
members)
Weight 320 gm

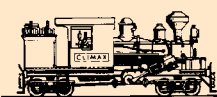
Postage and packing: Within Australia, 501 gm to 3 kg \$10.90, over 3 kg \$15.00

Send to: LRRSA Sales, P.O. Box 21, Surrey Hills Vic 3127, Fax (03) 9701 8221.

Payment may be made by cheque, money order, Mastercard or Visa.

Buy securely on line,
see our web site:

www.lrrsa.org.au



An invitation to join the LRRSA ...

Membership of the LRRSA offers you:

- Light Railways magazine, mailed to you six times a year
- Substantial discounts on LRRSA publications
- Meetings in Adelaide, Brisbane, Melbourne and Sydney
- Tours to places of light railway interest

Annual Subscription for year ending 30 June 2012 is \$48.00

Includes LR Nos 220 to 225 (Overseas by airmail: NZ, PNG, Japan, South-east Asia - \$A65.00; Rest of world - \$A77.00).

- If joining in June or July pay \$48.00 (\$65.00/\$77.00 overseas) and receive 6 issues of *Light Railways* (Nos 220-225).
- If joining in August or September, pay \$40.00 (\$54.20/\$64.17 overseas) and receive 5 issues of *Light Railways* (Nos 221-225)
- If joining in October or November, pay \$32.00 (\$43.33/\$51.33 overseas) and receive 4 issues of *Light Railways* (Nos 222-225).
- If joining in December or January, pay \$24.00 (\$32.50/\$38.50 overseas) and receive 3 issues of *Light Railways* (Nos 223-225).

- If joining in February or March, pay \$16.00 (\$21.67/\$25.67 overseas) and receive 2 issues of *Light Railways* (Nos 224-225).
- If joining in April or May, pay \$56.00 (\$75.83/\$89.83 overseas) and receive 7 issues of *Light Railways* (Nos 225-231).

Join easily on our website: www.lrrsa.org.au

Application for membership of Light Railway Research Society of Australia Inc. P.O. Box 21, Surrey Hills Vic 3127

I, _____
(full name of applicant)

of _____

(address)

(postcode)

desire to become a member of the Light Railway Research Society of Australia Inc. In the event of my admission as a member, I agree to be bound by the rules of the Society for the time being in force. I enclose cheque/money order for \$48.00, or please charge my Visa/Mastercard No.

_____ Expires ____ . ____

Name on Card _____

Signature _____



Industrial Railway News Editor : John Browning
PO Box 99, ANNERLEY 4103
Phone: (07) 3255 9084 / 0407 069 199
e-mail: ceo8@iinet.net.au

Special thanks to contributors to the LRRSA & Cane Trains e-groups, the Canetrains.net forum, and Jim Bisdee's West Australian Railscene e-Mag

NEW SOUTH WALES

PEABODY ENERGY AUSTRALIA PTY LIMITED, Metropolitan Mine, Helensburgh
(see LR 205 p.19)

1067mm gauge

On a visit to the colliery on 9 June as shown in media reports, the Opposition leader, Tony Abbott took a ride in what appeared to be a diesel personnel carrier. His pithead press conference appeared to show some preserved coal skips in the background.

Editor 6/11

QUEENSLAND

BUNDABERG SUGAR LTD, Bingera Mill

(see LR 214 p.24)

610mm gauge

Bingera Mill started crushing on 20 June. Rostered for the 2011 season on three shifts are EM Baldwin B-B DH locomotives *OAKWOOD* (5800.1 5.75 of 1975), *GIVELDA* (5800.2 5.75 of 1975), *DELAN* (5800.3 5.75 of 1975) and *MIARA* (8988.1 6.80 of 1980). Walkers B-B DH *KOLAN* (633 of 1969 rebuilt Bundaberg Foundry 1996) is rostered on afternoon and night shifts only. Com-Eng 0-6-ODH locomotive *WATTLE* (FD4789 of 1965 rebuilt Bundaberg Foundry 1990) is on day shift only. *BURNETT* (AH2967 of 1963) is rostered on afternoon shift at Wallaville. There are plenty of spare locomotives at Bingera. Because *BURNETT* was having its wheels turned at the start of the crush, its duties were undertaken by Com-Eng 0-6-ODH *INVICTA* (A1513 of 1956 rebuilt Bundaberg Foundry 2001). Com-Eng 0-6-ODH *TEGEDE* (FD4799 of 1966) replaced *GIVELDA* when it suffered an engine failure three days into the crushing. EM Baldwin 0-6-ODH *MANOO* (3875.1 7.71 of 1971) has been hauling ballast for the navvies.

Based at Fairymead, Bundaberg Foundry B-B DH *BOOYAN* (001 of 1991) is on three shifts. EM Baldwin B-B DH locomotives rostered on cane haulage at Fairymead are *BUCCA* (6104.1 8.75 of 1975) on day and afternoon shifts and *MOORLAND* (5565.1 10.74 of 1974) on day shift only.

At Bingera, Com-Eng 0-6-ODH *THISTLE* (A1207 of 1955) and ex-Moreton Mill EM Baldwin 0-6-ODH *BLI-BLI* (6/1257.1 7.65 of 1965) have been stored in the workshop/garage for several years but were noted outside in early June.

Following flood damage, Splitters Creek bridge was recently repaired with rock being placed to protect the abutment at the mill side.

Lincoln Driver 6/11; Mitch Zunker 6/11

BUNDABERG SUGAR LTD, Millaquin Mill

(see LR 214 p.24)

610mm gauge

Millaquin commenced crushing on 6 June, handling company plantation cane for the first two weeks. No cane has been able to be sent across the Burnett River from Fairymead via the cable ferry because of damage to the terminal on the northern side caused during the slack season floods. The ferry was not expected to be in operation until late July.

Lincoln Driver 6/11

MACKAY SUGAR LTD

(see LR 219 p.26)

610mm gauge

With preparations for the early start of the crush well under way, May 12 was a busy day on the Mackay Sugar rail system with at least 17 locomotives in use, showing the extent that rail activity can take even outside the crushing season. At Racecourse Mill, Clyde Queensland 0-6-ODH *BROADSOUND* (70-710 of 1971), and Clyde 0-6-ODH locomotives *ROSELLA* (64-317 of 1964) and *MUNBURA* (67-570 of 1967) were shunting the yard, taking bins out and bringing others back along the lines towards Homebush and Munburra. Following workshop attention, Eimco B-B DH 19 *NARPI* (L256 of 1990) did a test run to Bakers Creek Loop in the morning and Clyde 0-6-ODH *VICTORIA PLAINS* (66-490 of 1966) did one in the afternoon. EM Baldwin B-B DH *SHANNON* (7126.1 5.77 of 1977) left Racecourse



Marian Mill's Walkers B-B DH TANNALO stabled at North Eton depot on the afternoon of 5 May. The double peaks of Mt Kinchant are on the skyline and in the shed skulks unrebuilt 73-class locomotive 7308 (Walkers 667 of 1971).

Photo: Scott Jesser

Industrial Railway **NEWS**



Scott Jesser captured a variety of Mackay Sugar activity. **Top:** Marian Mill's Eimco B-B DH NARPI crosses the Uruba bridge on 15 June with 68 empty bins for Beatrice Creek 1 & 8. The missing spans have been replaced with an embankment. **Centre:** Clyde 0-6-0DH ST.HELENS (61-234 of 1961) stowed with its ballast train at Costellos 6 is seen under the light of the full moon during the night of 19 May. **Above:** Walkers B-B DH TANNALO once again, this time crossing Six Mile Creek bridge near Hampden 2 on Marian's Narpi line on May 12. It was being used on a tree-trimming run.

mid-morning heading towards Pleystowe with the rail brush. This is a four-wheel vehicle built on a bin frame with a small engine that powers rotary wire brushes to clean scale and rust off the rail heads. Before the start of each season it is deployed at sensed road crossings and automated points as well as on all dangerous gradients.

On the Marian system, EM Baldwin B-B DH MELBA (12512.1 7.85 of 1985) and Clyde 0-6-0DH locomotives CONNINGSBY (61-232 of 1961) and ALEXANDRA (61-235 of 1961) were moving bins from the yard and from Blakes, along the Allandale line and through North Eton to the Savannah Loops. Walkers B-B DH TANNALO (705 of 1972 rebuilt Bundaberg Foundry 1995) ran from the mill, over the Messmate Range and along the Narpi line on tree-trimming duty with two men carrying extended chain saws on the locomotive. EM Baldwin B-B DH BALMORAL (10684.1 4.83 of 1983) was dropping ballast along the Devereux branch and another ballast train was operating on the Langdon line, probably hauled by Clyde 0-6-0DH TE KOWAI (56-103 of 1956).

On the Farleigh system, EM Baldwin B-B DH HAMPDEN (6706.1 5.76 of 1976) ran from Farleigh to Pleystowe with a rake of bins and EM Baldwin B-B DH FOULDEN (7220.1 6.77 of 1977) ran at least as far as Dumbleton Junction on what was probably a tree-trimming run. Clyde 0-6-0DH SEAFORTH (61-233 of 1961) was on the North Coast line at Denmans with the welding wagons and Clyde 0-6-0DH PALMS (70-708 of 1970) was working out of Ossa 2 with one of the re-sleeping machines. Eimco B-B DH FARLEIGH (L254 of 1990) was moving bins around near Pleystowe, at Nebia Junction, McDonalds, and then back along the Marian system to Victoria Plains Loop.

Between 2 May and 13 May, Marian Mill's flood-damaged bridge over Cattle Creek at Uruba was rebuilt with a rock embankment replacing the missing two spans.

150 ex-Fairymead Mill bins were put into service during the slack season, with new wheelsets and couplings. This number represents the average quantity of 6-tonne bins that are written off each year as a result of accidents.

The crushing season commenced in late May with the locomotive allocation almost the same as for the start of the 2010 season. The exceptions are that two locomotives formerly at Marian are now based at the Pleystowe depot, Clyde Qld 0-6-0DH PALMS which is spare, and Clyde 0 6-0DH 13 DEVEREUX (67-568 of 1967) which is allocated to the navvies. In addition, Marian Mill's Eimco B-B DH 18 GARGETT (L255 of 1990) was still under repair and was expected to be back in service by the end of June, coupled with a new bogie brake wagon, BV6, built by Farview Engineering of Farleigh.

Hayden Quabba 5/11, 6/11; Scott Jesser 5/11, 6/11; Brian Miller 6/11

MSF LTD, South Johnstone and Mulgrave mills

(see LR 219 p.26)

610mm gauge

The Maryborough Sugar Factory Ltd changed its name to MSF Sugar Ltd at the 2011 annual general meeting. The company's headquarters have now moved to Gordonvale. The corporate changes that culminated earlier this year means that the combined interconnected rail network now includes the lines of Hambledon Mill, Babinda Mill, Goondi Mill, Mourilyan Mill, the Innisfail Tramway and the Maria Creek Tramway. However the two mills seemed likely to operate fairly separately for the 2011 season.

With the closure of Babinda Mill, most of the cane from its area was expected to go south to South Johnstone Mill in 2011. Babinda was expected to remain a base for locomotives, with a single locomotive and two multi-pairs likely to be stationed there. Further locomotives are likely to be based at out-depots such as Goondi, Mourilyan and Silkwood.

Prof B-B DH 33 *NYLETA* (PSL25.01 of 1990 rebuilt South Johnstone 1993) was transferred from South Johnstone to Mulgrave Mill by road on 19 May. It has been out of use since failing during the 2009 season but is expected to be put back into service there for the 2012 season rather than rebuilding a further Walkers DH-class locomotive. It remained parked in the navy yard at Mulgrave on 22 June. Two Com-Eng 0-6-0DH locomotives have also been transferred to Mulgrave from South Johnstone Mill and have received new numbers and names. These are 12 *RIVERSTONE* (AD1452 of 1961), ex South Johnstone 23, and 17 *DEERAL* (AD1453 of 1962), ex South Johnstone 21. Mulgrave Mill's Com-Eng 0-6-0DH 8 (A1926 of 1958) is being rebuilt with a new cab, but was not completed by late June.

The Mulgrave tippler was sent away to NQEA in Cairns to be modified to accommodate 6-tonne bins and was back in place by mid May. It seems some teething problems were experienced with it during the first week of the crushing in the third week of June. About 300 6-tonne bins have been transferred to the Mulgrave fleet, and they are kept separate from the 4-tonne and 10-tonne bins.

A new steel bridge on concrete piers has been installed at Mackeys Creek. This bridge is north of Gordonvale on the Mulgrave Mill main line to Redlynch. Storage capacity has been increased at James Loop, Babinda, by the installation of an additional line.

South Johnstone Mill's EM Baldwin B-B DH 26 (7244.1 8.77 of 1977) has been fitted with a new Cummins engine and EM Baldwin B-B DH 24 (5477.1 8.74 of 1974) has received a new torque converter. Ex-Babinda Com-Eng 0-6-0DH locomotives 4 *HARVEY* (AD1138 of 1960) and 5 *BRAMSTON* (AH2460 of 1962) have been reconnected as a multi-pair unit for the first time since being given new cabs in 2008 and will be based at South Johnstone in the 2011 season, as will another multi-pair. Bogie brake wagon 6 (built South Johnstone 1990) and six-wheel brake wagon 2 (EM Baldwin 6575.1 5.76 of 1976) were prepared for use in the season but

the other six-wheeled brake wagons seem not to be used. Three are in the storage shed at South Johnstone: 1 (built Clyde 1972), 3 (EM Baldwin 6575.2 5.76 of 1976) and 4 (Hockey Engineering 1982). Number 5 (built by South Johnstone in 1986 from a Drewry diesel locomotive frame) was last noted out of use at the Mourilyan mill site, together with Plasser Model KMX-12T tamping machine 249 of 1982.

During May, two ex-Mourilyan Clyde 0-6-0DH locomotives that have been based at South Johnstone were seen on point cleaning duties in preparation for the start of the crush. This involves hauling a four-wheel wagon with an air compressor mounted on it. An air lance is used to clear out any trash and debris from the point mechanisms to minimise the chance of derailments. In late May, 14 (63-288 of 1963) was seen operating in the Babinda area and 15 (66-491 of 1966) was seen near Goondi.

It was reported in LR 218 that a South Johnstone aluminium road transport 'canetainer' had been modified for general rail use. Three were converted as an experiment but no more have been made for the 2011 season.

Shane Yore 5/11; Carl Millington 5/11, 6/11; Chris Stephens 5/11, 7/11; Luke Horniblow 5/11, 6/11; Tom Porritt 7/11; *The Australian* 21/5/2011

PROSERPINE CO-OPERATIVE SUGAR MILLING ASSOCIATION LTD

(see LR 218 p. 29)

610mm gauge

Mackay Sugar seemed to have been blindsided by its efforts to acquire Tully Sugar when Sucrogen announced a proposed deal to buy Proserpine Mill for \$115m on 2 June. This followed negotiations with the Proserpine Board and is dependent on a shareholder's vote, requiring a 75% majority, to approve the necessary changes in the company structure. This will probably occur in August. The agreement effectively cut Mackay Sugar, long regarded as Proserpine's most likely suitor, out of any negotiations, but Mackay quickly made approaches to Proserpine growers in an effort to block the sale.

Townsville Bulletin 4/6/2011; *Whitsunday Times* 16/11/2011

SUCROGEN (HERBERT) PTY LTD,

Herbert River Mills

(see LR 219 p.26)

610mm gauge

EM Baldwin 4wDH *Sugarworld Shuttle* (9109.1 9.80 of 1980) was being used on tree trimming duties on the Crystal Creek line in mid-May.

A new arrival at Victoria Mill in May was a hi-rail adaptation of a Suzuki Jimmy two-seater road vehicle for use as an inspection car. The vehicle originated in Western Australia, where it is assumed the conversion work was carried out, and carries WA registration plates 1CSL 760. It is fitted up with sprays that allow flange lubricating oil to be applied to the rail faces on curves.

The overhaul of Macknade Mill's EM Baldwin B-B DH *DARWIN* (6171.1 9.75 of 1975) at Victoria Mill was not quite completed for the start of the crush on 23 June, and so it was replaced by Clyde 0-6-0DH *INGHAM* (64-382 of 1964) which was sent over from Victoria Mill to cover. The new cab from Ontrak in Sydney for Victoria Mill's EM Baldwin B-B DH *GOWRIE* (7135.1 7.77 of 1977) was expected to arrive for fitting during the second half of June. It has the angled 'Pilbara style' front and rear windows.

150 new 8-ton bins from China are being assembled by Rinaudo's Engineering at Macknade. Firmi's Engineering at Halifax is working of a batch of 'joiners', where two 4-ton bins are bolted together to make an 8-ton bin. All the remaining 4-ton bins in use on the Herbert have been semi-permanently coupled into pairs.

Chris Hart 5/11, 6/11; Carl Millington 5/11

SUCROGEN (HAUGHTON) PTY LTD,

Invicta Mill

SUCROGEN (PIONEER SUGAR) PTY LTD, Inkerman Mill, Home Hill

610mm gauge

(see LR 219 p.27)

Invicta Mill's Plasser tamping machine (133 of 1978) was seen at work at the southern extremity of the Inkerman Mill system on 19 May.

Two locomotives at Invicta Mill have received new engines this slack season, Com-Eng 0-6-DH *BARRATTA* (AH4098 of 1965) and Walkers B B DH *CLARE* (655 of 1970 rebuilt Tulk Goninan 1995). Luke Horniblow 5/11



Plane Creek Mill's Walkers B-B DH 4 CARMILA (676 of 1971 rebuilt Bundaberg Foundry 1996) passes 'Zero Loop' in Sarina on 20 June with 231 loaded bins and brake wagon BV1. Photo: Scott Jesser

Industrial Railway NEWS

TULLY SUGAR LTD

(see LR 219 p.27)

610mm gauge

At the shareholders meeting on 18 May, approval was given to change the company rules to allow a single shareholder to own more than 20% of the shares. That enabled a three-way bidding war to emerge between Bunge Australia Holdings Pty Ltd, Top Glory Australia Pty Ltd, a subsidiary of the state-owned China National Cereals, Oils and Food Stuffs Corporation (COFCO), and Mackay Sugar. The latter's bid was backed by \$102m loan funds made available by Louis Dreyfus Commodities.

COFCO offered \$44 per share and Mackay Sugar \$43 with the additional incentive of continuing canegrower ownership. In early July, a flood of acceptances from shareholders gave COFCO control of the company.

EM Baldwin 0-4-0DH *TULLY 3* (6/1082.1 2.65 of 1965) was in attendance with the track welding train at Murray Flats (South Euramo) on 19 June at the new sidings being installed for deliveries of Kennedy cane, while Walkers B-B DH *TULLY-8* (606 of 1969 rebuilt Bundaberg Foundry 2004) was being used to test the track at the same location.

Cairns Post 19/5/2011; *Courier-Mail* 29/6/2011; Luke Horniblow 6/11; Editor 7/11

XSTRATA ZINC MOUNT ISA

(see LR 199 p.17)

1067mm gauge

A new diesel locomotive was installed for charging purposes at the lead smelter during 2009, replacing an electrically-powered unit. It was supplied by Irwin Car & Equipment of Irwin, Pennsylvania and is a 4wDH fitted with a Deutz F6L 914W engine. Its function is to convey material for smelting to the blast furnace and its air compressor is used to operate the doors on the charge car, which is known as a 'larry car'. Prior to being put into use, the locomotive was displayed at the 2009 Mt Isa Mining Expo.

Irwin Car & Equipment via Ross Mainwaring 5/11; mine to market June 2009

WESTERN AUSTRALIA

BHP BILLITON IRON ORE PTY LTD

(see LR 219 p.28)

1435mm gauge

A major derailment, believed to be due to track failure occurred 120km south of Port Hedland on the Newman main line on 28 May. The mid-train locomotives, both class leaders, suffered extensive damage as did about 40 loaded ore cars. Electromotive Canada Model SD70Ace Co Co DE 4301 *BING* (20038540-02 of 2005) fared slightly the better of the two and was expected to be removed from the site for rebuilding but GE Model AC6000CW Co-Co DE 6070 *PORT HEDLAND* (51062 of 1999) suffered a badly bent frame and was



Top: South Johnstone Mill's Clyde 0-6-0DH 15 stabled at Bonso House Loop in the Babinda area in early June with a compressor wagon used for point cleaning duties. Photo: Shane Yore **Centre:** New Suzuki Jimmy hi-rail vehicle in the truckshop at Victoria Mill on 18 May. Photo: Chris Hart **Above:** BHP-Billiton Iron Ore's GE Co-Co DE 6070 PORT HEDLAND is a sorry sight as it lies by the track at the site of its derailment awaiting the scrapper's torch on 23 June. Photo: Toad Montgomery

expected to be cut up on site. The track was destroyed for a few hundred metres resulting in a track closure for a couple of days. The two locomotives were still lying beside the track on June 20.

AN order has been placed with Electromotive Canada for a further 17 Model SD70ACe Co-Co DE locomotives to be numbered 4374 to 4390, with delivery anticipated from around May 2012. Electromotive Canada Co-Co DE 4335(20078915-002 of 2008) has been named *MYSTERY*.

The final section of duplicated track on the Mt Newman main line, between Bing and Yandi, was handed over on 29 April, making a total length of 285km of duplicated track.

As from 15 June, trains consisting of three coupled rakes are no longer running on the Newman line with the new configuration being two 116 car rakes joined with two locomotives up front and two more at the front of the second rake. Sixteen loaded ore trains will run per day, with the corresponding empty services, increasing to 18 as the Yandi mine ramps up production. Brett Geraghty 6/11; *WA Railscene* e-mag 135, 139, 141, 142

THE PILBARA INFRASTRUCTURE PTY LTD

(see LR 219 p.29)

1435mm gauge
The four recently-arrived second-hand GMEMD Co-Co DE Model SD90MAC-H began entering service at the start of June. It is understood that the two not prepared for shipping at the Juniata Shops of the Norfolk Southern Railway in Altoona, Pennsylvania were prepared by Mid America Car Inc, Kansas City, Missouri. Five more ex-Union Pacific locomotives of the same type are being converted to Model SD70MACe at Altoona for Fortescue. They are:

UP No.	Builder's number
8527	976833-6
8530	976833-9
8531	976833-9
8541	976833-20
8554	976833-33

The last two were built for EMD by Super Steel Schenectady Inc under subcontract.
WA Railscene e-mag 134

PILBARA RAIL

(see LR 219 p.29)
1435mm gauge

Six new GE Model ES44ACi Co-Co DE locomotives were unloaded at Dampier on 30-31 May, numbered 8157 to 8162. These locomotives are fitted for electronically controlled pneumatic (EPC) braking. Wabtec will be supplying EPC equipment to Rio Tinto under a \$21 million contract with for retro fitting to its fleet of ore cars and locomotives.

On May 3 the Federal Court overturned an Australian Competition Tribunal ruling giving the

Fortescue Metals Group the right to negotiate access to the Robe River railway and refused an appeal from Fortescue to gain third-party access to the main Hamersley line.

WA Railscene e-mag 136, 139, David Bromage 5/11

SCT LOGISTICS PTY LTD, Forrestfield

1435mm gauge

(see LR 216 p.29)

Gemco Rail at Bellevue seem to have been doing maintenance work on the SCT Forrestfield English Electric (Aus) Bo-Bo DE shunting fleet. H5 (A.087 of 1964) was returned after attention there on June 15 with English Electric (Aus) Bo-Bo DE H3 (A.085 of 1964) taking its place in the workshop.

WA Railscene e-mag 142

OVERSEAS

FIJI SUGAR CORPORATION

(see LR 219 p.29)

610mm gauge

The Fiji Government is in the process of gaining 100% ownership of FSC and has already taken full financial responsibility, including debts and payments,

A number of arrests were made in April and May of people who stole scrap metal from FSC, including steel cane trucks.

A visit to the Viti Levu mills in the third week of June saw Lautoka and Rarawai mills crushing, and Penang conducting trials on 24 June.

At Lautoka, locomotives are based at the mill and Navo, south of Nadi. Based at Navo are Clyde 0-6-0DH locomotives Model HG-3R 10 (65-437 of 1965) and 11 (65-432 of 1965) and Model DHI-71 20 (64-385 of 1964) and 22 (59-204 of 1959).

Clyde Model HG-3R 0-6-0DH locomotives 10, 12 (65-431 of 1965) and 14 (68-655 of 1968) were seen in operation on a daily basis between the mill and Navo, working loaded trains with up to 75 trucks and empty trains with up to 187 trucks. The Ontrak Clyde 0-6-0DH rebuild *Howie* (59 202 of 1959 rebuilt Ontrak 2434-1 of 2008) has been numbered 23 and was also seen in use on cane haulage. Three Simplex Mechanical Handling 4wDH locomotives were at work in the mill yard, 13 (122U135 of 1973) and 14 (122U136 of 1973) on the weighbridge shunt and 15 (122U156 of 1975) on transferring empties.

The following locomotives were under repair in the shed:

2	0-6-0DH	Clyde	57-146	1957
9	0-6-0DH	Clyde	64-380	1964
16	0-6-0DH	EM Baldwin	5058.1 5.73	1973
21	0-6-0 DH	Clyde	58-191	1958
16	4wDH	Simplex MH	122U157	1975

There was also a pink and white striped linecar under repair.

Clyde 0-6-0DH 5 (58-189 of 1958) sits out of use beside the fence near the loco shed, missing its leading and middle wheelsets.

A major scrap drive seems to have been undertaken with large numbers of discarded cane trucks gone as well as derelict locomotives,

while other locomotives are said to have gone to Labasa Mill. The details of changes since 2008 are believed to be as follows, but not all are verified:

1	0-6-0DH	Clyde	57-140	1957	sent to Ontrak, NSW, 2008
3	0-6-0DH	Clyde	57-173	1958	scrapped
4	0-6-0DH	Clyde	57-174	1958	sent to Labasa Mill
7	0-6-0DH	Clyde	58-196	1958	sent to Labasa Mill
8	0-6-0DH	Clyde	63-290	1963	scrapped
13	0-6-0DH	Clyde	65-449	1965	sent to Labasa Mill
17	0-6-0DH	EM Baldwin	9637.1 6.81	1981	scrapped
	0-6-0DH	Clyde	61-220	1961	scrapped
(9)	4wDM	Motor Rail	10115	1949	scrapped by 2008
(12)	4wDH	Motor Rail	122U128	1972	scrapped
17	4wDH	Hunslet	9267	1986	sent to Labasa Mill
18	0-6-0DH	Baguley-Drewry	3770	1983	sent to Labasa Mill

A visit to the traffic office indicated that Lautoka now has 1200 cane trucks in its fleet. The extended "jumbo sized" ones that were trialled a few years ago were found to be too prone to derailment and there was no sign of any of these trucks anywhere around the mill site.

At Rarawai Mill, locomotives are based at the mill and at Tavua over the Maqere Range to the north-east. Clyde Model HG-3R 0-6-0DH 9 (64-378 of 1964) and Hunslet 0-6-0DH 22 (9274 of 1987) are based at Tavua. Around the mill, EM Baldwin 4wDH 17 (5060.1 9.73 of 1973) was on the weighbridge shunt with Baguley-Drewry 0-6-0DH 24 (3773 of 1983) and Diema 4wDH 25 (5170 of 1991) working in the empty yard. In use hauling cane to the mill were Clyde Model DHI-71 0-6-0DH locomotives 7 (57 175 of 1958) and 27 (56-113 of 1956), and Hunslet 0-6-0DH locomotives 20 (9087 of 1982) and 21 (9273 of 1987).

The following locomotives were under repair:

10	0-6-0DH	Clyde	64-384	1964
28	0-6-0DH	Clyde	55-66	1955

Hunslet 0-6-0DH 18 (9285 of 1987) is outside the workshop and has now lost its hood and radiator, leaving just the cab on the frame. Clyde 0-6-0DH 3 (55-62 of 1955) is beside it, dumped without wheels. Clyde 0-6-0DH 6 (57-157 of 1957) is nearby missing its engine, radiator and side-rods but retaining its wheels. It is claimed that it will be repaired when parts are to hand. A major cleanout of scrap also appears to have taken place at Rarawai. The details of changes since 2008 are believed to be as follows:

2	4wDH	Steelweld	IEL6304	1962	scrapped
4	0-6-0DH	Clyde	56-81	1956	scrapped
8	0-6-0DH	Clyde	62-271	1962	sent to Ontrak, NSW, 2008
14	4wDM	Motor Rail	10441	1955	scrapped
19	4wDH	Com-Eng	HB2764	1963	scrapped

On the morning of 25 June, Clyde 7 worked out to Vadravadra with 85 empty trucks, where it crossed Hunslet 20 coming in from Lausa with 28 loaded trucks. The Clyde left its empties in the loop and assisted 20 from the rear, around the corner and up to the Kings Road level crossing.

Industrial Railway NEWS

It then ran light engine back to the loop and its empties. In 2008 Hunslet 20 was missing the Hunslet plate on the front above the radiator, but it now has one, which may well have come off 18. It has also been repainted.

Lastly, at Penang, three locomotives were in use on 24 June. EM Baldwin 4wDH 3 (5060.2 9.73 of 1973) was working on the line that runs along the coast to the west. Diema 4wDH 10 (5172 of 1991) was working in the yard and on the lines to the north and east of the mill.

Baguley-Drewry 0-6-ODH 9 (3772 of 1983) was working to the south of the mill, through Rakiraki to Waimari with nine cane trucks carrying portable rail sections for delivery and 43 empty cane trucks. Baguley 0-6-ODM 8 (2727 of 1964) is dismantled in the shed without an engine.

A scrap drive has taken place here also and the following locomotives have now gone:

(1)	4wDM	Motor Rail	10003	1947
4	4wDM	Motor Rail	11036	1956
(7)	4wDM	Motor Rail	14041	1959
(16)	4wDM	Motor Rail	14047	1960
1	0-6-ODM	Hudswell Clarke	D753	1950

Scott Jesser 6/11; *Fiji Times* 6/6/2011; FijiVillage.com 18/5/2011, 21/5/2011



Book Reviews

Winning the Coal: Coal Miners' Stories from the Rosewood Scrub

by Bob Hampson & Wendy Gratton

Published 2010 by Ipswich City Council, PO Box 191, IPSWICH Q 4305. Recommended retail price \$15.00. Available on line from the Rosewood Scrub Historical Society at <http://www.rshs.com.au/products.html>

The Rosewood and Marburg district west of Ipswich was an important coal mining area from the late nineteenth century to about 1970. There were many small-scale drift mines that were worked with the use of narrow gauge railways, both underground and on the surface. Caledonian Colliery had a 2ft gauge line with petrol locomotive haulage to a government railway siding between Walloon and Thagoona,

as detailed by John Knowles in *ARHS Bulletin* 382 and mentioned in LR 170. In addition, many mines used small diesel locomotives underground from the 1950s.

The book has little to say about locomotives, but plenty about the miners who tell in their own words of their labours and their experiences in a tough and demanding industry. There is plenty of detail about the task of mining coal and the challenges and dangers it posed to the men. Narrow gauge coal skips were used to handle coal and waste stone and featured in their daily work underground and on the surface. Particularly interesting are the tales of the horses, highly intelligent and much loved, that handled underground haulage before the advent of flameproofed diesel locos. These horses knew their rights. They knew exactly how many skips they were supposed to haul and would pull no more. They could work with little supervision if it suited them and had an acute awareness of knock-off time as the set hour approached. Then they wasted no time in returning to the light above.

There are many more interesting anecdotes about working methods, safety, bosses, wages, accident and jokes which help the reader to gain an understanding of the environment and culture of a coal mine where manual labour and mateship were the keys to production and wellbeing.

This very worthwhile book also contains a valuable chronology and list of local mines. It is highly recommended to anyone interested in mining history.

John Browning



LETTERS

Dear Sir,

Missing in action – Malcolm Moore Ford V8 locomotives (LR 219)

Neville Conder has kindly pointed out to me that several others of the apparently Malcolm Moore derived Chinese locomotives, this time on 600mm gauge, were used on the line serving limestone quarries at Chi Ni situated about 35km north-west of Guangzhou during the 1980s. The photograph can be found by following the links from the website: <http://www.johnnathersuch.com>

The same photograph and other brief details appeared in *The Narrow Gauge* (UK Narrow Gauge Railway Society) No.118 in 1988. This second location in the same province suggests that the locomotives may have been built in this area of China.

John Browning
Annerley, Q.

Dear Sir,

Portland Cement locomotives (LR 210)

Regarding your front cover photo of the Portland Cement loco 2605, may I remind you and your readers that Commonwealth Portland Cement No.2 (Robert Stephenson 2994 of 1899), an 0-6-0 saddle tank, lives at the Valley Heights Loco Depot, and indeed is an operable locomotive with a current boiler certificate.

This loco did not see out the final days of the cement works, and was donated to

the Parramatta Park Steam Tramway in the mid-1960s. Prior to the restoration of Steam Tram 103A and steam trailer car 93B to service in September 2005, 'Stevo', as we call it, was our only operable loco, and was used monthly for cab rides at the museum.

To be fair, it does see only very occasional service these days, due to its very limited carrying capacity.

David Lewis
via email



Portland Cement 0-6-OT 5 (Andrew Barclay 1470 of 1916), 0-6-OT 3 (Andrew Barclay 1234 of 1911) and 0-6-OST 2 (Robert Stephenson 2994 of 1899) outside the works, sometime prior to WWII.
Photo: David Lewis collection

OBITUARY

George Bond

(13 November 1913 – 6 June 2011)

George Edwin Bond died in his sleep at Benowa, Queensland, on 6 June at the age of 97 years. He was one of the last of a group of pioneer railway enthusiasts whose seminal work was to record the basic histories and contemporary details of Australian railway operations, both government and private, in the period from the 1930s to the 1950s. Their legacy remains an immense gift to us.

George was born in 1913 in Wondai, Queensland, a new centre that had come into existence as a result of a closer settlement scheme. His family moved around but it was in Bundaberg that he attended high school (then not the norm), and commenced employment. He worked briefly at the Millaquin sugar mill and refinery before being apprenticed to a monumental stone mason. He enlisted in the RAAF in 1942 and served in Australia and Papua New Guinea. His signwriting skills led him to the task of painting insignia on aircraft post war before his discharge in 1948. On returning to his mason's craft, he was involved in the manufacture and erection of thousands of headstones for various war cemeteries. He rejoined the RAAF in 1952 during the Korean War and after postings in Australia and overseas he was discharged in 1966 as a survey draftsman with Airfield Construction Squadrons. George was for a time caretaker at *Newstead House*, Queensland's oldest surviving residence, and was then employed at the University of Queensland library before retiring in 1977.

George's interest in railways may have been self-generated, but he described his first meeting with the like-minded Queenslander Ken Rogers as a key event in his life. His correspondence with the likes of CC Singleton, Giff Eardley, Les Poole, Charlie Small, John Buckland, Cedric Thomas, Bruce Macdonald and Bill Henderson reminds us of a previous time and charts the way these men shared their knowledge to piece together a picture of the past.

His first contribution to the ARHS *Bulletin* was made in 1941 and he wrote on Queensland's first railway for the *Journal of the Royal Historical Society of Queensland* in 1965. Although his ARHS membership had lapsed for a time, he became an early member of the Queensland Division on its foundation in 1957 and thereafter served as a Councillor. He joined LRRSA in 1967. His keen interest and deep knowledge in history extended to genealogy and monumental masonry.

George was a great researcher, being an avid collector of information and a methodical and intelligent analyst and interpreter of it. He arranged his collated documentary and photographic material by topic in a large number of ring-binder files, which he updated on a continual basis. These lined his study walls and were made freely available to others. Among those he was very generous towards in active encouragement and collaboration were John Armstrong, John Knowles, Keith McDonald, Gerry Verhoeven, John and Ruth Kerr, David Burke, David Mewes and the present writer. No doubt there were many others.

George was very interested in Queensland's private and industrial railways. He collaborated with John Buckland to write a series of articles on the railways of the Burnett River District, including the Bundaberg district sugar mills, in 1951-2, and he wrote a significant article on the Stannary Hills and Irvinebank Tramways in 1962. These were published in the ARHS *Bulletin*. He contributed information and photographs to Gerry Verhoeven's 1969 article on Stannary Hills and Irvinebank in *Light Railways* 30 and 32. Frank Stamford has commented that George's material added significantly to the impact of those articles, helping to establish *LR* as a publication of more than just Victorian interest.

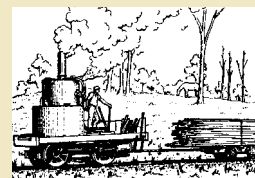
The ill health of George's wife caused them to move to a retirement home on the Gold Coast in 1986 and it was some time after this that he decided to pass on his treasured railway history files to others. He handed his files on Stannary Hills and Irvinebank to John & Ruth Kerr, on the Pacific phosphate and PNG railways to Bob McKillop, on other Queensland private and industrial railways and the NSW sugar mill lines to David Mewes, and on Queensland government railways to the ARHS (Queensland Division), all on the clear understanding that they should remain accessible to future researchers.

A generous and kind-hearted man, many were privileged to know George Bond and have been encouraged to follow his example.

John Browning, with thanks to Bruce Macdonald, John Knowles, John Armstrong, Keith McDonald, Ruth Kerr, David Mewes, Frank Stamford, Ray Ellis and Brian Webber.



George early this year receiving a Life Membership certificate from ANGRMS. The Life Membership had been awarded in the early 1980s. Photo: Brian Webber



LRRSA NEWS

MEETINGS

ADELAIDE: "The Walhalla Line"

The topic for the August meeting will be the Walhalla Line. Members and friends are invited to make contributions at meetings on any light rail topic, and suggestions of topics for future meetings are welcome. .

Location: 150 First Avenue, Royston Park.

Date: Thursday 4 August at 8.00pm.

Contact: Les Howard on (08) 8278 3082

BRISBANE: "Dave Rollins' African Adventure"

Dave Rollins will show slides of his recent trip to South Africa.

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 12 August at 7.30pm.
Entry from 7pm.

MELBOURNE: "Annual General Meeting and Wombat Forest"

Following our brief Annual General Meeting prolific light railway author Norm Houghton will be giving an illustrated talk on the Wombat Forest. This forest, in the Daylesford area of Victoria, hosted many broad and narrow gauge timber tramways in the latter half of the nineteenth century.

Location: Ashburton Uniting Church Hall, Ashburn Grove, Ashburton.

Date: Thursday, 11 August at 8.00pm

SYDNEY: "Whyalla Part 2"

Whyalla Part 2 — The Tramways & Railways of BHP Whyalla & Coffin Bay in South Australia, covering the period from 1956 onwards. David Jehan will present a video and photos from this fascinating area. If you missed Part 1, don't worry — come along anyway!

Location: Woodstock Community Centre, Church Street, Burwood, (five minutes walk from Burwood railway station).

Date: Wednesday 24 August at 7.30pm



RESEARCH

LRRSA Research Charter (LR 219)

In the last issue we gave notice that the draft LRRSA Research Charter drawn up by John Browning would be discussed at the National Conference held during the Society's 50th Anniversary celebrations in Melbourne on 8 May. In the event, a full agenda resulted in this matter being put aside for subsequent discussion among members.

Accordingly, we are presenting the draft LRRSA Research Charter and inviting comment from readers on any areas where you feel it could be improved.

Preamble

The LRRSA promotes a collaborative approach in its activities. To that end the following Charter has been developed to define appropriate expectations of authors when developing material for publication and the approach used by the Society in evaluating and preparing material for publication. The Society publishes material in the Society's journal, in books and in digital formats.

General

- The Society encourages high quality historical research and

writing to further its aims and encourages the publication of such work whether by the Society or other publishers.

- The Society aims to publish high quality material and where appropriate, will collaborate with other groups and/or publishers in this endeavour.
- The Society encourages the view when writing about light railways, the organisations and the industries that they served, that due attention should be given to the social, cultural and economic contexts in which they operated and impacted upon.

Researchers and authors

- No publication can ever tell the complete story, but whilst high quality is always aimed for, perfection in terms of the complete story is unattainable.
- Historical knowledge cannot be restricted to being a matter of private ownership and contributions of others must always be acknowledged.
- No individual should expect to hold a monopoly over any historical research topic, no matter how many years they have devoted to it or how superior they believe their knowledge to be.
- Respect should be shown to the work others have done and are doing in areas of common interest.
- Critical review of one's own work by others with relevant knowledge and understanding, is a vital component of quality research and publishing.

Editing and publishing

- The task of editing and publishing is one of collaboration between

author and publisher and must respect the rights of each party. It is through appropriate collaboration, mutual trust and respect that the agreed aims are most effectively furthered.

- Each author is expected to collaborate with the publisher as necessary to define the scope of any work for publication.
- Whilst no one can be forced to collaborate with others, the LRRSA will consider the extent of collaboration with the LRRSA research community and accountability to the accepted norms of historical research and writing when making decisions about material to be published.
- Editors, in liaison with the author, may involve others in reviewing the material, both from a technical and general readership perspective, as part of the editorial process.
- To maximise quality, authors and editors are encouraged to listen to and consider all relevant opinions, particularly those of Society members and collaborators. All relevant laws must be respected.

Green Cape Lighthouse, NSW

In his book, *Fatal Lights* (Sydney, Dolphin Books, nd), Tom Mead provides the following information about the building of the Green Cape Lighthouse on Disaster Bay in the far south coast of NSW:

Building the lighthouse involved overcoming a few problems. There was no road to bring from Eden all the construction materials and equipment shipped there from Sydney, so Bittangabee Bay, six

kilometres away between the Cape and Twofold Bay, was used as the main supply landing base. A wharf and storehouse — still there over a century later — was built and a wooden railway was constructed to transport everything to the lighthouse.

David Burke

Ilfracombe Iron Company, Blyth Creek, TAS

This company, formed in 1872 by a group of Melbourne businessmen, erected a charcoal blast furnace, some 40 to 50 feet high, to smelt local ore for pig iron manufacture. Following an unsuccessful trial smelt in October 1873, the first iron was tapped the following month, but the furnace was damaged and the venture was wound up shortly afterwards.

For the transport of ore and finished products, a narrow gauge tramway that had been built by the Ilfracombe Sawmilling Company in the 1850s to Beauty Point was restored to working order. Phil Rickard has found a report in the *Launceston Examiner* of 20 September 1873 (p.5, 'Tramway to the Works') that provides some details of the line.

This tramway is now considerably overgrown, and the timber in it is so completely decayed that it will be necessary for the Iron Company to construct a new one, which will be proceeded with immediately, and will be built with 3ft gauge to tally with the short one to the jetty. At present the Company have to cart by means of bullock drays, having themselves made a pretty good road on which there are no less than nine bridges.

Beech Forest to Crowes Railway Centenary

To celebrate the centenary of the opening of the railway from Beech Forest to Crowes on 20 June 1911, there was a photographic display with a book launch at Lavers Hill and a bus tour organised by the Geelong & South Western Rail Heritage Society Inc. A new book, *End of the Line*, was specially written for the occasion by Norman Houghton.

The bus tour left Geelong railway station at 9.30am with some 45 tourists on board and headed for Birregurra, where an inspection of the old railway station building took place and a sumptuous morning tea was had. Our bus driver for the day Michael Menzies, along with Norman Houghton who are both well versed on

the history of the Geelong and Otway region, provided an almost endless but fascinating running commentary during our journey.

A short stop was made at the Colac railway station, to view the permanent historical display there, before departing for Gellibrand. On the way many features of the narrow gauge railway were pointed out. We stopped at Gellibrand to view the replica station building with its photographic and map display, along with a log bogie with a load of sawn timber. The climb from Gellibrand toward Beech Forest demonstrated how difficult it was for the surveyors to find a route for the railway.

After passing through Lavers Hill we proceeded to the buffers stop at Crowes, which were restored by members of the Puffing Billy Preservation Society in the 1990s.

After viewing the buffer stop and NQR wagon, together with the site of Crowes station, we

returned to Lavers Hill for lunch at a local cafe.

The day's highlight was the event at the Lavers Hill Hall, where a photographic display and book stalls had been set up, along with a screen showing old film of *The Beechy*. Norman Houghton spoke to the packed audience on the history of the Beech Forest to Crowes railway. The LRRSA President, Bill Hanks, then 'despatched', the new book, *End of the Line*, in a proper railway manner with the blow of a whistle and the wave of a green flag.

An original oil painting of a scene on the railway near McDevitt station was auctioned to raise funds for the local historical society, and then a cake was cut, followed by afternoon tea.

The tourists were then rounded up by our bus driver for the return journey, with appropriate commentary, back to the Geelong railway station where we arrived around 6pm. Bill Hanks



Heritage & Tourist

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

DURUNDUR RAILWAY, Woodford
610mm gauge

Australian Narrow Gauge Railway Museum Society Inc.

Knowing your audience is a key issue that is overlooked by many museums and preserved railways. It is therefore encouraging to see that the ANGRMS Board is seeking to address this matter. In the latest issue of its newsletter, the President reports that visitors return to the Durundur Railway primarily due to a combination of the special experiences and services provided by its volunteers, from safe rolling stock and track, and friendly staff, right down to a clean and tidy station and site. Presumably other preserved railway and museums have similar experiences and we would be pleased to hear of these in reports to *LR*.

While many museums and tourist sites in Queensland have reported a reduction in visitor numbers as a consequence of the recent floods, the Durundur Railway has managed to maintain passenger numbers at similar levels to 2010. This is attributed to more active marketing efforts. Considerable progress has been made recently in converting No. 2 Workshops Road to a rolling stock servicing facility. The servicing pit, a project conceived 15 years ago, was rapidly becoming a reality in June 2011. Two-way radio communication

between the SMs office and locomotive crews was also being introduced.

Durundur Railway Bulletin, 310, July-Aug 2011

LAHEY'S CANUNGRA TRAMWAY

A visit on 13 June showed that the landslip on the patch near the tunnel entrance has been repaired, but the tunnel has now been closed (hopefully temporarily) due to pieces of sandstone 'flaking off' the tunnel entrance and interior following heavy rain. The route of the tramway on the Canungra side is well presented and maintained but the results of a major washout a few hundred metres before the tunnel mouth destroys the even grade and deprives visitors of a

clear idea of the careful engineering of the line. On the forest side, the tunnel emerges into bushland that has been considerably degraded by the effects of human disturbance combined with heavy rainfall.

John Browning, 06/11

NAMBOUR MUSEUM

610mm gauge

Nambour & District Historical Museum Inc

A number of Brisbane LRRSA members attended the open day at this museum in Mitchell Street on 7 May (LR 218, p 33). The museum was formed in 2003, before the closure of the Moreton Sugar Mill, the largest industry in the district, and so was in a position to acquire many items of

interest including a representative selection of mill tramway vehicles and equipment. The open day promoted the Shay locomotive (Lima 2800 of 1914, incorporating parts of 2091 of 1908), which was a focus of attention. Perhaps the most impressive exhibit, however, was the last steam locomotive to work for the Moreton Mill, the John Fowler built 0-6-0T locomotive *EUDLO* (B/N 16207 of 1925). This beautifully restored and presented loco was on display in the open. Also on the same track were ex-Australian Army Malcolm Moore 4wPMs *JOE* (811 of 1942) and *SANDY* (1051 of 1943). For rail enthusiasts, it was refreshing to see a general interest community museum making such



John Fowler 0-6-2T EUDLO (16207 of 1925) was a popular exhibit at the Nambour Museum open day on 7 May 2011.

Photo: Brian Webber



Former Moreton Mill 0-4-2T BLI BLI (John Fowler 14418 of 1914) is unloaded at the former mill site on 1 June 2011 after an absence of over 40 years.

Photo: Clive Plater

a good job of displaying heritage industrial railway items.

Former Moreton Mill 0-4-2T *BLI BLI* (John Fowler 14418 of 1914) was relocated from Muller Park at Bli Bli to the Nambour Museum on Wednesday 1 June 2011. The loco was originally from Babinda Mill, being purchased by Moreton Mill in 1960 and retired in 1967. It was placed in Muller Park in 1968, being displayed in the open air for many years before a shelter was constructed and so the salt air has taken its toll on the loco. With the planned redevelopment of Muller Park it was decided after consultation with interested parties that it would be best to move *BLI BLI* to the Nambour Museum. She joins the other former Moreton Mill locos described above at the museum. *BLI BLI* is currently located on part of the former Moreton Mill site next door to the museum, which will be used for initial restoration work.

Brian Webber, 05/11; Clive Platter, 06/11

New South Wales

LAKE MACQUARIE LIGHT RAIL, Toronto

610mm gauge

Grahame Swanson

The restoration of the former Goodah-Burrinjuck Railway 0-4-0WT *JACK* (Krauss 6083 of 1908), last reported in LR 206 (p 28) made a significant advance with the news on 16 May 2011 from the NSW Office of Environment & Heritage that LMLR's grant application had been successful. Upon meeting critical project milestones, funding under the grant will be made available to LMLR, on a (approximately) dollar-for-dollar, co-contribution basis. The Office has accepted the Manager of LMLR as the Project Director and NSWRTM's Curatorial Committee Chairman as the Project's Heritage Specialist.

The LMLR extends its thanks to the locomotive's owner, the NSW Rail Transport Museum, together with the Mayor of the City of Lake Macquarie and the Member for Lake Macquarie (State), for their enthusiastic written support of its heritage grant funding application. LMLR also recognises the State Government's important contribution to the preservation of the State's industrial heritage, through the display of special project signage — for the duration of the restoration — now located

at the entrance to the Railway and on the locomotive itself.

The locomotive is back on its wheels and fully passed its first rolling test when several low-speed circuits of the track were made whilst being towed by 4wDM *MALCOLM*. An unexpected development was that Krauss builder's number '5963' was revealed when the hand-brake lever and counterweight were cleaned. This particular number is a mystery, because '5963' was the builder's number carried by an altogether larger, 760mm-gauge locomotive built by Krauss at its Linz plant.

Colin McDonald, 06/11

fence line inside the parade ground to the bottom corner where a new station is to be built. The new section, which is to be completed before the October Rally, at least to completion of perway and fencing, will be the last for some time. Operation of passenger trains over the new track will depend on certification by ITSRR. The new heavy road crossing has been designed and earthworks started.

The museum is seeking new volunteers to help with the building of the extension and to help run the railway during the rallies. Regular working bees are held, mainly on

of main line operations covering Mothers' Day on 8 May, hauling the 'Kids Fest Express' on 15 May, and then on 28 May it was in charge of the 'Camp Fire Express'. The latter event was the sixth Albion Park Outdoor Camp Cooking Challenge, which had previously been held at the showgrounds. The ILRMS was approached by the Camp Cooking Club last year to host the event, which puts members' outdoor cooking skills to test, competing against other outdoor cooking enthusiasts. The mix of outdoor cooking and steam trains proved to be most popular and the day was



Former Timbertown, Wauchope 0-6-0T THE GREEN HORNET had been more or less 'off the radar' since being sold at auction in 1999, so Ian McNeil was surprised recently to discover it on display outside The Railway Lodge Motel at Taree, on the NSW mid-north coast. Before working at Timbertown, the 1910-vintage Fowler (B/N 12271) had been CSR's Macknade Mill number 8, and before that, Goondi Mill number 5 'The Flying Piecart' (see LR 219, page 18).

MENANGLE NARROW GAUGE RAILWAY

610mm gauge

Campbelltown Steam & Machinery Museum

The Oil, Steam & Kerosene field days on 14-15 May 2011 saw the third rebuilt carriage in service for the first time. The cold windy day played havoc with ex-Corrimall Colliery 0-4-0WT (Robert Hudson/Hudswell Clarke 1423 of 1922), as the ash pan was not sitting correctly between the frames and the loco started several small fires. Prompt action by the onsite fire truck soon had these under control. Sunday was a busy and trouble free day for the railway operations.

Immediately following the rally, work commenced on the next track extension. It is a simple continuation from the current end of the line at the steam Navy for some 150 metres around a corner and follows the

the weekends but also on some weekdays as well. Those wishing to help drive the trains will need to pass a Category 1 medical exam and sit some in-house training courses. Steam engine boiler or engine driving certificates are a distinct advantage. Please contact Paul Dove (Phone 0425 615 774 or email: pd5286@bigpond.com) or the LR editors. Paul Dove, 06/11

ILLAWARRA TRAIN PARK, Albion Park

610mm gauge

Illawarra Light Railway Museum Society Ltd

Following the repair work undertaken by the gallant ILRMS team of volunteers, following the March 2011 floods at Albion Park (LR 219, p 35), there were good attendances at running days in May. Ex-Victoria Sugar Mill 0-6-0 *CAIRNS* (Hudswell Clarke 1706 of 1939) was in charge

a success. Former Tully Sugar Mill 0-6-2T *TULLY 6* (Perry Engineering 7967/49/1 of 1949) handled main line trains on 8 June.

Funding by the Bendigo Community Bank enabled an ILRMS volunteer expedition to travel to the Victoria Sugar Mill at Ingham during May, where they collected redundant concrete sleepers that had been donated by Sucrogen to the ILRMS. The track equipment, which has since arrived at Albion Park, will enable the main line to be extended from the triangle point area towards the boundary fence between the ILRMS site and the Illawarra Regional Airport.

The next major event will be the Tongarra Train Fest in November, which will see the ILRMS fleet in action and other community groups providing displays during the event.

Brad Johns, 06/11

Victoria

ALEXANDRA TIMBER TRAMWAY 610mm gauge Alexandra Timber Tramway & Museum Inc.

ATTM volunteer stalwart Joan Derosin (1958-2011) was farewelled by over 60 of her friends and family at a moving service held on the platform of the Alexandra railway station on 2 May 2011. Since 2001, Joan had helped coordinate group visits, their catering needs and organised volunteers for the day, as well as general welcoming of visitors and cleaning up, while her special craft wares were featured in the entry building.

Timberline, June 2011

CARRIBEAN GARDENS RAILWAY, Scoresby

610mm gauge
This operation was last reported LRN 93 (April 1993). Caribbean Gardens had its genesis in 1945 when AW Spooner acquired 300 acres of land in Scoresby which he named Dalmore Park. Whilst overseas in 1958, he discovered fibreglass and realised that it had an application in boat building. As a result, he established the Caribbean boat factory and constructed a lake on which to test his boats. This was later opened to the public as Caribbean Gardens and, today, hosts one of Melbourne's major markets.

As part of the amusements developed at the site a 610mm gauge railway was built around the lake for a distance of 3.14km. This railway is laid in 40-50lb/yd rail on wooden sleepers, and has one pedestrian overbridge, and three road crossings controlled by flashing light signals. There is no other signalling on the railway and it is worked on the 'one engine in service' principle.

There are two train consists, each of 11 fibre-glass-bodied four-wheel cars (there are at least three styles of underframe apparent) and a locomotive. The main consist is kept at Grand Central Station and is headed up by a converted Motor Rail 'Simplex' bow-frame 4wDM locomotive with a 'National' engine. This is very likely Motor Rail builder's number 3711 of 1924 and carries a fibreglass body to match the cars. It appears to have some form of air brake in addition to the original Simplex mechanical screw-brake. Coupling is by link-and-pin with attached safety chains.

The second consist is kept at a less elaborate station to the

west of 'Grand Central' and is stabled under cover on the only siding on the railway. This train is headed by Malcolm Moore 4wPM 1092 of 1943, the highest numbered survivor of its class. It was purchased in 1975 and was in standby service by at least 1993. This consist appears to see little use and the locomotive still carries the headboard fitted when it visited the Alexandra Timber Tramway on 8 November 2003 to celebrate the 60th anniversary of the construction of these locomotives.

Recently, the track at Caribbean gardens was upgraded by a team from the Puffing Billy railway

headed up by John Shaw. To assist with this project, Matisa tamper 7665 of 1967 (ex Australian Army and Cattle Creek Sugar Mill, and now owned by the Alexandra Timber Tramway) was transported from Alexandra to Scoresby, where it operated during April and May 2011. It has since been returned to Alexandra.

The Caribbean Gardens Railway operates on Fridays only from 9am and tickets purchased from the ticket box near the chairlift cost \$3 (rides are free up until 11am). Children under 12 must be accompanied by an adult.

Peter Evans, 06/2011

WALHALLA GOLDFIELDS RAILWAY

762mm gauge

Walhalla Goldfields Railway Inc.

The finale of the LRRSA 50th Anniversary celebrations was a coach tour to the historic goldmining township of Walhalla (140km east of Melbourne) on Sunday 8 May by 33 members and friends. The crisp sunny morning was perfect for a coach tour despite an ominous weather forecast predicting rain.

Alluvial gold was discovered by Edward Stringer and three companions at Walhalla in January 1863 and the ensuing gold rush led to the establishment of the town in the rugged terrain. As



With the track newly upgraded at the Caribbean Gardens Railway at Scoresby, the fibreglass-bodied train was looking clean and fresh when photographed at Grand Central Station by Peter Evans on 22 June 2011. The locomotive is a converted 'Simplex' bow-frame 4wDM locomotive, believed to be Motor Rail 3711 of 1924.



Walhalla station photographed during the LRRSA visit on Sunday 8 May. The WGR train headed by B-BDH Spirit of Emu Bay is at the platform awaiting its 11.30am departure for Thomson River and return, while the recently delivered ex-QR B-BDH DH37 (Walkers Eng 619/1970) is on temporary 1067mm gauge track on the right. Photo: Bob McKillop

the township prospered many civic improvements were made culminating in the establishment of a two foot, six inch gauge railway from Moe to Walhalla. The railway was completed around the start of 1910, but mining production was tapering off by that time and the line to Walhalla gradually ran down after WWI until early 1944 when it was closed. The restoration of the line by the Walhalla Goldfield Railway Inc has been extensively covered in *Light Railways*.

The LRRSA group arrived at the Walhalla station around 10.30am, which provided plenty of opportunity to explore the precinct before catching the 11.30am train

Stringers Creek flowing beside the railway was a memorable experience.

On return to Walhalla station and close observation of the loco running around its train for the next trip, the LRRSA group moved onto the township of Walhalla. A two course lunch was served at the Star Hotel complete with home-made Erica meat pies. Sweets were delightful apple pies with cream served with tea and coffee.

Following lunch, a number of the group explored the township, while others undertook the tour of the Long Tunnel Extended goldmine. They were shown various remnants of the mine's interesting history

BAW BAW SHIRE, Erica

914mm gauge

On the wet afternoon of May 8, the LRRSA group returning by bus from Walhalla stopped briefly to view the McCormick-Deering engined Days 0-6-OPM rail tractor displayed with a pair of log bogies in Erica. The tractor is believed to have been built in 1941 and comes from the Forests Commission of Victoria Thomson Valley Tramway. By 1975 it was on display, with a new tractor engine, alongside the Moe-Walhalla Road. In about 2001, it was moved to a small park on the site of the former railway station, and the exhibit has recently been repositioned in the park on rebuilt track.



The former FCV Thomson Valley Tramway Day's 0-6-OPM logging tractor displayed at Erica with log bogies and other items from the local forest industry. Bob McKillop took this photo during the stopover by the LRRSA Walhalla tour on Sunday 8 May 2011.

to Thomson River and return. Our locomotive was ex-Emu Bay Railway B-B DH No. 1001 (Walkers 576 of 1963), now named *Spirit of Baw Baw*. It was rebuilt and regauged in 2005 by Bill Ferris at Yallourn, when side rods were fitted to the bogie axles, using parts from a Malcolm Moore underground mining locomotive ex-Australian Iron & Steel, acquired via the Zig Zag Railway. The coaching stock comprised: 1NBCW *GOODING*, 2NBW and 1NBW. These vehicles were built using the underframes of former 900mm gauge stock ex-SEC Yallourn. The B-B DH loco DH37 (Walkers 619 of 1969) obtained from QR in 2010 (LR 217, p 36) was in the yard on a short section of 1067mm gauge track. For the interstate visitors who had not been to Walhalla, the train journey through the dramatic gorge with

including the settings for several large Cornish boilers in the main machinery chamber. The mine owners have undertaken exploratory drilling to determine whether there are sufficient gold reserves to justify the cost of re-opening the mine.

The forecast rain had commenced as drizzle by 3pm, so we were grateful to be snug in our coach again for the return journey to Melbourne. On the way back, Bill Hanks pointed out a number of places where the Walhalla railway easement could be seen and locations where timber milling tramways crossed the road. Our special thanks go to Bill Hanks, Wayne Brown and the staff of Quinces Busline, who all contributed to a sensational 50th anniversary tour to Walhalla.

Simon Moorhead, with assistance from John Browning, 06/11

Unfortunately, the timber bogies are now bereft of the substantial log that once surmounted them. The rail tractor is no longer connected to the bogies and indeed now faces towards them rather than away as previously. The tractor is beginning to look the worst for wear and has lost its simulated coupling rods in the recent move. There is no interpretive signage. Hopefully the Shire Council plans to complete this display and implement a conservation plan for these historic items.

John Browning, 06/11

South Australia

NATIONAL RAILWAY MUSEUM, Port Adelaide 1067mm gauge Port Dock Station Railway Museum (SA) Inc

During the month of May the NRM held an exhibition for South

Heritage & Tourist

Australia's 'About Time' History Festival. Titled 'South Australia's Railways and the World War Years', the exhibition highlighted the contribution of the men and women of South Australia's railways during the First and Second World Wars. It included artefacts and a slideshow of photographs from the collection, many of which have never been on public display. A self-guided tour allowed visitors to learn about locomotives and carriages housed at the Museum with associations to those wars.

On Saturday and Sunday 28 and 29 May, NRM operating symbolic troop train re-enactments. Former Port Pirie Associated Smelters 0-6-OT *PERONNE* (Andrew Barclay 1545 of 1919) hauled a special consist of war era vehicles throughout the weekend, namely three goods wagons — V van, HFN open and FNT flat car — leading passenger car 144 and brake van 7553. *PERONNE* has a direct link to the conflict because it was one of a class of four delivered in 1918-9 named after notable battle sites in France where high numbers of Australian troops lost their lives.

Bob Sampson, 06/11

COBDOGLA IRRIGATION & STEAM MUSEUM

610mm gauge

Cobdogla Steam Friends Society Inc

The Cobdogla Irrigation & Steam Museum celebrated its 25th anniversary by hosting a dinner at the local club. A selection of photographs taken over the 25 years was available for inspection and the guest speaker, Peter Forward of SA Water, outlined how the museum came into being. Peter is still the liaison between SA Water, which owns the museum, and the Cobdogla Steam Friends Society and the Barmera National Trust, who operate the railway and museum.

The museum was created by the then Engineering & Water Supply Department (E&WS, now SA Water) in 1986 as part of South Australia's Jubilee 150. It is based around the only working Humphrey Pump left in the world. When the museum opened, it was operated by paid staff on weekends throughout

the Jubilee year, and besides the Humphrey, a Fowler B6 crane traction engine was in operation. In 1987, the museum was operated by E&WS staff on a reduced scale. During this time, apprentices at the E&WS Ottoway workshops restored the steam locomotive that had operated at Cobdogla (Bagnall 1801 of 1907).

As the restoration drew to a close, the E&WS called for expressions of interest in persons willing to operate the steam equipment at the museum. Following a public meeting, the Cobdogla Steam Friends Society Inc was formed in March 1988 to operate the two steam engines. At the same time, the Barmera National Trust was offered the use of the former Steam Plant Building as their new home following the condemnation of their former premises in Barmera. The running of the museum was then handed over to the two volunteer groups and the Humphrey Pump operators who by now were all retired former E&WS employees. The locomotive was recommissioned in June 1988 and since then the Steam Friends have extended the track several times and have restored their own Fowler Z7 ploughing engine. Work continues on the Loveday track extension, with a start being made on the installation of a new set of points just past Scotty's Loop so the turntable can be relocated to that area. As this is the approximate half-way point to Loveday, the new location will be more operationally useful and will constitute the head of rail for the next few years.

Denis Wasley, 06/11

Western Australia

BENNETT BROOK RAILWAY, Whiteman Park 610mm gauge Western Australian Light Railway Preservation Association Inc

Billed as the 'New Friends of Thomas Day' and reported as 'Kid's Day', the event on 22 May at Whiteman Park broke all BBR records for attendance and brought wide smiles from the treasurer and the many volunteers who contributed to the preparations for the event and the successful train operations on the day. Bob and Jean Baker handled bookings for the event and took payments from 250 pre-paid bookings, so the cost of the event had been covered before the first train departed.

The steam locomotives, 2-8-2 NG15 123 *FREMANTLE* (Anglo-Franco Belge 2670 of 1951) and 0-4-2T BT1 *BETTY THOMPSON* (Perry Eng 8967.39.1 of 1939) were overhauled and passed their steam tests in readiness for the day, 4wDH *ASHLEY* (Kliess Eng 1986) underwent repairs and the new carriage, AQ 1788, was finished in time for the event. Three trains operated throughout the day — 0-4-ODM *PLANET* (Hibberd 2150 of 1938) and *ASHLEY* with the blue compartment and toast-rack carriages; NG15 123 with the 'R' carriages, Shell tanker and brakevan; and BT1 and 0-6-ODM *ROSALIE* (John Fowler 4110019 of 1960) with the corridor consist, including

AQ 1788 — and operations went smoothly throughout the day.

As reported in LR 213 (p. 38), the theft of 4km of hard-drawn copper wire in March 2010 put the electric safe working system out of action between Mussel Pool and Whiteman Village Junction stations. The missing wire was replaced with galvanised fencing wire to detract from further thefts in June-July 2011, thereby enabling the electric staff system to be returned to operation. The small 'home-built' 4wPM locomotive *RIDLEY* that is used to power the tamping machine has been sent to Wallis Drilling to have a new motor for the tamper hydraulic system installed.

BBR Newsletter, June 2011

Overseas

Welsh Highland Heritage Railway, North Wales

597mm gauge

The Royal Gala event on the Welsh Highland Heritage Railway at Porthmadog over the weekend 29 April to 1 May 2011 saw several special features. The diminutive Llanberis Lake Railway 0-4-0ST *ELIDIR* (Hunslet 493 of 1899) was the visiting locomotive and the re-launch of the 'Gladstone Car' was a feature event.

Volunteers at the Welsh Highland Heritage Railway have been quietly restoring the former North Wales Narrow Gauge Railways



Bob Sampson photographed 0-6-0T PERONNE (Andrew Barclay 1545 of 1919) hauling a special consist of war era vehicles during the 'About Time' History Festival event at the National Railway Museum, Port Adelaide, on 29 May 2011.



The work train heads out on the track extension from Cobdogla towards Loveday loaded with components for a points set. Simplex FARLEIGH, guard's van, tool wagon, flat top carrying the dog spike puller, rail bender, match truck and bolster wagons with components. The setting is the track along the top of the Humphrey Pump channel. The trees in the channel have all grown since the museum was formed.

Photo: Denis Wasley

carriage number 8, known as the Gladstone Car at their Porthmadog base. No. 8 was constructed by the Metropolitan Carriage and Wagon Co. Ltd. of Birmingham in 1891 and was classified as a 'Tourist Carriage' - one of the first attempts to encourage tourist travel on any narrow gauge railway in Britain. The design incorporated open balconies and a central all-glazed saloon which was curtained, upholstered and carpeted to provide somewhere to retire when the Welsh weather turned unpleasant. The Prime Minister, William Gladstone, travelled in No. 8 on his way to a holiday at Nant Gwynant in 1891 and also in 1892. As a result the carriage was nicknamed the 'Gladstone Car'.

The carriage body of number 8 was located many years ago by members of the Festiniog Railway in a farmer's field near Harlech. It was deemed to be beyond restoration, although various fittings were removed for re-use (quite possibly on vehicles still running on the FR today). In 1989 the carriage was recovered from the farm by the preservationists from the WHR. One balcony end was completely missing but most of the remaining body was intact. An original builder's plate was even still in place. After a lengthy restoration, the carriage re-entered service on the WHR in 1996-97.

At the end of the 2010 season, the carriage was withdrawn for the interior to be completely overhauled and restored to its original Victorian

splendour. Some work had been carried out earlier in 2010 when Norwegian chopper couplings compatible with FR stock had been fitted. The overhaul of the interior is now finished and the completed carriage was re-launched into traffic over the bank holiday weekend on 29 April 2011.

To say it looks magnificent is an understatement; the central saloon has been upholstered in the same material used in the 1893-built buffet car, and very comfortable it is too; arm-rests have been custom-made and fitted, curtain poles were specially made to the correct length and curtains have been fitted, all the interior paint has been stripped and repainted and much of the wood has been painted with scumble to

Heritage & Tourist

give the original wood-grain effect. Traditional oil lamps have also been fitted — these are mounted on gimbals to allow them to remain level regardless of the cant on the carriage. The balcony ends have also been completely overhauled; the floors have been repainted, and the seats stripped back to the bare wood and repainted to a very high standard. here too, the woodwork has been vanished to a very high gloss.

Michael Chapman, 05/11

SANDSTONE ESTATE RAILWAY, Hoekfontein, South Africa

610mm gauge

Paul Eillemse and Bob Baker of the Bennett Brook Railway attended the 2011 Steam Gala at the Sandstone Estate in April 2011. The area had received heavy rain prior to the event that caused several washaways around culverts, particularly in the 'Mountain Section', rendering this track unusable. The event proceeded using the line between Grootdraal and Vailima Siding. In all, 20 steam locomotives ran during the week-long event, with Paul and Bob having the opportunity to drive eight of them.

A highlight of the event was having four NGG Garratt locomotives in steam — NGG 11 55, NGG 13 49, and NGG 16 Nos. 88 and 113 — one from each of the builders of these fine locomotives. All four combined to haul a train of 35 wagons over two days of the Steam Gala.

Following the Steam Gala the Sandstone Estate posted a gloomy assessment of the railway preservation movement in South Africa. The review (since removed) expressed frustration at critics who failed to actually visit the site. It concluded that "Sandstone's directors, shareholders and investors who have committed substantial funds over the years to try to make a difference in this particular Heritage sector for moral rather than financial reasons, now view the investment climate as being inappropriate".

Sandstone Estates' remarkable achievements in preserving and restoring narrow gauge locomotives and rolling stock has received international acclaim and it is to be hoped it continues.

Bob Baker, 06/11



Welsh Highlands Heritage Railway resident loco GERTRUDE (Barclay 0-6-0T 1578 of 1918) and visitor ELIDIR Hunslet 0-4-0ST (493 of 1899) gently bring the Gladstone car into Porthmadog station during its relaunch in 29 April 2011.

Photo: Michael Chapman



At the Sandstone Estate Steam Gala, four NGG Garratt locomotives; NGG 11 55, NGG 13 49, and NGG 16 Nos. 88 and 113 — one from each of the builders of the class — combine to haul a train of 35 wagons. Photo: David Benn



Scott Jesser made a quick visit to Fiji in June. **Above:** Lautoka Mill's Clyde 0-6-0DH 20 (64-385 of 1964) struggles along with a loaded train near Nadi airport just after sunset on 23 June with steam pouring out of its radiator. **Right:** Rarawai Mill's repainted Hunslet 6wDH 20 (9087 of 1982) at Vadravata with 28 loaded trucks on 25 June. **Below:** Portable track for farmer use at Penang Mill being unloaded from line bogies near Waimari on 24 June in preparation for the start of crushing. Baguley-Drewry 0-6-0DH 9 (3772 of 1983) is the locomotive.

