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LIGHT RAILWAYS

Australia's Magazine of Industrial & Narrow Gauge Railways

Light Railway Research Society of Australia Inc.

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Australia's Magazine of Industrial and Narrow Gauge Railways

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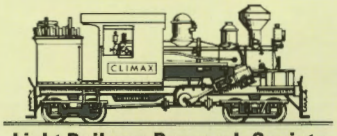

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1 inch (in)	25.40 millimetres
1 foot (ft)	0.30 metre
1 yard (yd)	0.91 metre
1 chain	20.11 metres
1 mile	1.60 kilometres
1 super foot	0.00236 cubic metre
1 ton	1.01 tonnes
1 pound (lb)	0.454 kilogram
1 acre	0.4 hectare
1 horsepower (hp)	746 Watts
1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

Contents

Comment

It's a tough business running a tourist or preservation railway these days. If the insurance premiums don't send you to the wall, then the amount of government red tape will make you wonder if it's all worth the effort. It has now become a business where, to use a Rumsfeldian expression, even amateurs must be professional.

An item posted on the LRRSA Yahoo website recently took my mind back 30 years, to the 'good old days', when our family company operated the steam train ride on the Central Park Railway at Forresters Beach, NSW *(see the cover of LR 166)*. The track was certified by an engineer, the loco's boiler and the crew held the necessary certificates of the time but, looking back, I have to say the whole shebang was operated more like Dad's 5in gauge line than a 'proper' railway.

We had a lot of fun (and actually made a bit of money) and while no one was ever even slightly injured on the CPR, there were a couple of alarming moments.

The most adrenaline-charged incident occurred one Sunday afternoon, when I was still driving 'on my L plates'. There had just been a light shower, and as we left the station and began the long descent down the 1 in 40 grade I made a slight application of the steam brake. The wheels locked. Harry carefully wound on the hand brake, but they locked again. The sand domes were full and the delivery pipes connected but we 'hadn't got around yet' to replacing the operating rods (missing when we bought the loco). The one option remaining was to apply the principle of ABS brakes (that a slowly rotating wheel provides more resistance than a locked one) by carefully manipulating the reverser and, soon enough, we were sliding through the s-bend and onto the blissfully level back straight.

The passengers were none the wiser. In fact they may have had their best trip ever, given that we were always being told our train ride was far too slow. We, on the other hand, emerged considerably wiser, and we revised our procedures accordingly.

The current regulations may seem a dreadful impost to those labouring on their *Safety Management System* document or whatever, but remember why they exist. In today's litigious world, we just can't afford those 'good old days'. *Bruce Belbin*

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

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

Light Railways is the official publication of the Society. Material submitted is subject to editing, and publication is at the discretion of the Editor.

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

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

Front Cover: *Puffing Billy Railway's 2-6-2T 8A crosses Cockatoo Creek bridge hauling the inaugural mixed train to Gembrook on Sunday 15 October 2006. Photo: Peter Ralph*

On 12 July 1945, a train conveying members of the Australian Army's 2/8 Field Regiment, 16 Battery, C Troop, approaches Badas, hauled by an O&K 4wDM locomotive. *Photo: Australian War Memorial No. 111511*

The Seria-Badas Railway

An Australian wartime operation in Brunei

by John Peterson

In April 1929, oil was discovered by the British Malayan Petroleum Company (BMPC), a subsidiary of Royal Dutch Shell, at Seria in Brunei, one of a number of contiguous British colonies in northern Borneo. A refinery was ultimately built in Lutong, Sawawak, fed by pipelines from the oilfields of Miri and Seria. By 1935 this area was the third largest oil producer in the British Empire. The oil was of very high quality and the refinery supplied aviation spirit to the British Royal Air Force.

The BMPC invested $8,000,000 in this field when the total annual revenue of the Brunei government was less than $500,000.[1] The oil area was very much a company town and relied on its own resources. Like much of coastal Borneo, it is very swampy and partly a peat bog. It was described as a "swampy, crocodile infested site..."[2] A recent dry spell, in March 2005, caused bushfires with a difference: the ground was on fire! Firemen had to pump water into the ground in order to put out the fire.[3] The swampy nature of the ground caused problems for the oil company. It made transportation very difficult and there was no source of suitable road stone. It seems likely that the oilfields at Seria would have included railways at least in its construction phase, like other similar fields in Borneo.

A source of water was needed to run the various machines as well to supply drinking water for the personnel. A source was found in a nearby river at Badas about four miles away. This was also a source of clay, which was needed in well drilling operations. A 600mm gauge 'Decauville' railway was built to assist with the construction of the pumping station and pipeline and was left in place for future maintenance needs.

In the final stages of World War II it was decided that the Australian Army would recapture strategic parts of Borneo. Operation Oboe Six was the name given to the recapture of Brunei with its strategic oil resources.[4] On 21 June 1945 the oil well town of Seria was captured but 37 oil wells were set ablaze by the Japanese as they retreated. Machinery was also put out of action by the removal of key parts and booby traps were created using bombs in vital positions such as against lathes. Some of the low-pressure wells were extinguished using sand but high-pressure wells proved more difficult. Eventually it was found that high-pressure steam was effective against these fires. Water, a key ingredient needed in fighting the fires, was in limited supply. Bombs salvaged intact from the Japanese booby traps were put to use blowing craters on the beach to fill with water, but had a limited usefulness as wave action soon filled them with sand.

The army was also hampered by the lack of specific oil industry experience among its engineers, and lack of local knowledge of the plant. Fortunately a former member of the operating staff returned and was able to point out the normal water supply system. This was via the 4-mile pipeline from the river at Badas served by the 'Decauville' railway. Getting this water flowing became a strategic necessity so a patrol was sent to secure the pipeline and pumping station at Badas.

An account of this patrol was written by Don Stewart and John Hemphill:

Called by Sgt Bill Pearce, "Pick up your gear", echoed around the warm air of Seria. "Gear" comprised bully beef, biscuits, tea, canned heat, plus usual WE equipment; also a new officer, Lt J D Andrew. Sadly we lost George Simpson at the Brunei airport "blue".

At Badas, on 1 July 1945, members of C Company, 2/17 Infantry Battalion attempt to clutch-start the railcar they discovered there after taking over the area.
Photo: Australian War Memorial No. 111625

Orders were to set up an ambush along the single-track railway running up-country through thick jungle to the Water Pumping Station at Badas on the Belait River. Across this rail line the Nips had placed fallen trees, rather unpleasant obstacles to negotiate. Attached to the Pl were an "O Pip" (arty Offr) and a Mortar Sgt.

First night a stray Nip ran into the rear section and was quickly disposed of by Jack Creber and crew. Otherwise the night was quiet, but rain made things very uncomfortable, especially on piquet, so the first cuppa next morning, brewed by canned heat, was "heaven sent".

Shortly after, a party of 12 to 15 Nips was sighted up the rail track. It was agreed to let the "O Pip" have first crack at them with the result - first shell, left of track; second shell, right of track and third shell, finished them.

Next stop, a timber sawmill, which offered cover of a sort and gave us a dry night. In the morning, out of the jungle walked about six Indians who had been POWs and managed to escape their mates' horrible death of having petrol poured over them and burnt alive. These fellows, although starving, would not eat bully beef. We all marvelled at this but it showed how truly they stuck to their religion.

Next day, "Thunder" Moore's section did a patrol to the Pumping Station before the rest of the Pl moved up to full strength. After arriving at the Pumping Station, Jack Heatley managed to get the diesel train going after the engine key was found. This engine then acted as the supply between Badas and Seria.

Royal Australian Engineers and civilian fitters were attached to this patrol with the task of getting the water flowing again. The pumping station was undamaged but had not been maintained by the Japanese. One of the twin water pumps could be repaired. The other had a broken crankshaft. This was later welded and turned in the machine shop and reinstalled. One of the mud pumps was eventually repaired and mud for the fire fighting was pumped down to Seria and stored. A railcar and two locomotives were discovered at Badas. It seems that the railcar was the unit made operational by finding the key, and the two locomotives towed back to Seria for repair.[5]

The railcar has the looks of a Wickham but a search through the list finds no numbers pre World War II that would suit. Identification would be welcome. The locomotive/s shown in the photos are believed to be Orenstein & Koppel Montania LD2 type.[6] The O&K list shows two machines of this type built for "N.V. Bataafsche Petroleum Maatschappij" in British Borneo. B/N 7207 is the only one with a cab similar to that in the photos, and is recorded as being 600mm gauge, suggesting that the line was not 2ft gauge as stated in some accounts.

The railway became important in transporting men and materials between Seria and Badas, probably indicating the lack of an alternative road. Examination of the photos held at the Australian War Memorial shows evidence of trucks, cars and a network of roads at the Seria end of the line but not at the Badas end, suggesting the need for the railway. This is also indicated in a series of photos showing the transport of two

A train has arrived at Seria and the soldiers have begun to unload supplies. The modifications made to the bogie wagons to accommodate the 25-pounder field guns can be seen. *Photo: Australian War Memorial No. 111517*

At the Seria end of the line, in July 1945, soldiers of 14 Platoon, 2/17 Infantry Battallion prepare to board the train for the journey to Badas. *Photo: Australian War Memorial No. 111628*

25 pounder guns precariously loaded onto a bogie wagon. How this might have been done is a bit of a mystery. However, it has been suggested that heavy timber was used to support the axle of the gun. It must have been a very slow trip judging by an account of a trip on the line:

While 1 Sec were operating in their jungle hell, part pt 3 Sec, under the baton of "Jungle Jim" Byrne moved to the local railway station to board the "Spirits of Salts"- a typical Queensland train - for Badas. After an extremely nerve-racking trip, during which chin straps had to be worn under the chin to obviate the loss of hats (fur felt), we arrived at out destination.[7]

It is interesting to compare the role of the Seria-Badas railway with the North Borneo railway [Sabah], also used by the Australian Army in its campaign in Borneo. The North Borneo line was the central and only viable communication link of the district and so its use was featured in both an offensive sense and as a support role for the frontline soldiers during the entire campaign. All supplies were carried on it despite its damaged and rundown state which necessitated the invention of frequent jeep trains as featured in previous articles in *Light Railways*. Their intensive use effectively required a railway management section of the army. Photos and reports of the time show extensive use being made of it by the local population reflecting an important additional role in the local economy.

In contrast, the photos of Seria and Badas show few local people, indicating that this was very much a one industry dependant area whose population fled with the invasions. The oil pumped from here was sent via pipeline to Lutong in Sarawak for refining, indicating a limited workforce requirement. The vital strategic role of the railway initially was to assist in the extinguishing of the oil well fires by transporting essential machines and personnel to get the water flowing down the pipeline to Seria again. It is doubtful it would have been used if there had been adequate roads in the area. After this its role became that of supporting the transport of the soldiers sent to guard the pumping station and their supplies. This was extended when limited forward foot patrols started using Badas as a base. Its minor role in this theatre of war is shown by the army continuing with its use despite the very poor condition of the line as shown in the photos. Once the oil well fires were put out, the army's role was very much as a caretaker and so the need for the railway would be very limited.

The Japanese withdrew to the centre of Borneo, and in June 1945, anticipating the end of hostilities, the British Military Administration was established, staffed mainly by Australians until the handover to civilian rule. The Australian Military Authorities refused to delegate responsibility to the British for this, apparently based on a belief that Australia should have post-war authority for Borneo since it had been Australian forces that had liberated them from the Japanese. Australian troops were relieved by British-led Indian troops in January 1946.[8]

The Seria to Badas railway is believed to have finally closed in the early 1960s. The delivery of new Wickham railcars in 1966 and 1980 would suggest that the lines within refineries in Borneo might have been used for a lot longer.[9]

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Soldiers of 14 Platoon, 2/17 Infantry Battalion on the way to Badas, July 1945. *Photo: Australian War Memorial No.111636*

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Electric Storage Battery Locomotives

Their Use and Advantage for Underground Mine Haulage

by M P McRae AMIE, AUST

from W.A. Mining and Commercial Review *August 1939, submitted to* Light Railways *by David Whiteford*

The adoption of electric storage battery locomotives for underground haulage in Australia can now be regarded as an established practice, and although the number of installations may be few compared with other countries, there is to-day considerable evidence that the battery locomotive is here to stay and is becoming the most favoured type of equipment for mine haulage.

It is, of course, generally recognised that electricity provides the ideal form of tractive power, but whereas for railway work the overhead trolley wire or third rail conductor system is quite satisfactory, in mine workings, tunnelling operation, or even for surface workings, the use of either of these systems has very serious drawbacks.

On any reasonably level installation in which the grade does not exceed 4 or 5 percent, these Battery Locomotives generally show an appreciable advantage when compared with any form of continuous rope or cable haulage, as they provide the same flexibility as horses or manual trucking yet entail very little extra expenditure to cope with additions or alterations as the drives or working faces are extended.

Careful investigations which have been conducted some years ago by the United States Bureau of Mines in co-operation with the Carnegie Institute of Technology have shown that the Storage Battery Locomotive represents the most practical and economical system for general underground haulage in level "country". A report issued by this authority summarised briefly the principal advantages of the Storage Battery Locomotive compared with other forms of underground traction which were examined in the following manner:-

(a) Elimination of overhead or bare wire conductors and bonded rails. In any Mine where bad roof conditions appertain the maintenance of this system is very costly, and there is always considerable risk of electric shock to all men working underground.

(b) The absence of any objectionable or harmful fumes to contaminate the air such as results from the use of locomotives powered by combustion engines.

(c) The complete safety and simplicity of operation by youths or unskilled labour, and the elimination of the dangerous practice of spragging skip wheels on gradients.

(d) Travelling roads are cleaner and better lighted which permits of constant inspection of the roof, and providing early detection of roof faults and consequently fewer accidents

The use of Electric Battery Locomotives for general haulage and gathering services has already proved a considerable factor in lowering the cost of production in may mines throughout Australia. Apart from the direct saving in labour, their use in place of auxiliary haulage, man power or ponies can show very material increases in both output and efficiency.

During the past few years, and principally following the revival of Gold Mine activities in Western Australia, there has been a distinct change in the outlook towards the Battery Locomotive. It is no longer regarded as of doubtful value and reliability because experience has proved that its use is a means of reducing operating costs and increasing production without a corresponding increase in capital cost. There are a number of Mines, particularly in that State, where the conditions underground lent themselves to the adoption of Storage Battery Locomotives with complete success.

When the gradients are favourable, the advantages of locomotives for trucking over rope haulages, either endless rope or main and tail, are very real. For any conveyer or rope haulage to operate to full advantage, a reasonably straight double road is essential. Locomotive haulage gives practically the same efficient results on a road which is not straight as on a straight one and only a single track is required. A locomotive haulage can be increased without difficulty, and a single haul or a short haul can be undertaken without starting up the whole system. Any road can be cleared quickly and with little labour, and where owing to twists and turns more than two haulages are required on any road, the electric locomotive can show a definite saving, and in one Mine the installation of a Locomotive in one road released three haulages, two of 15 horsepower and one of 25 horsepower, with an actual saving in wages of 1.42 pence per ton of ore hauled, and in this instance a saving of over £1,000 per annum in actual wages.

It is a common fallacy amongst mining officials that electric locomotives need perfect tracks. Good tracks are, of course, always an asset, but Storage Battery Locomotives are running very satisfactorily on tracks originally laid for rope haulage with only 25 or 30lb. rails, and without necessitating any additional capital expenditure on track or road upkeep.

When considering the installation of a Battery Locomotive in any mine it is necessary first of all to decide to what extent the mine can be adapted for locomotive haulage. If the best results are to be obtained it is desirable to plan underground so as to provide a slight grade of ½ to 1 percent in favour of the load from the working face to the shaft or adit. When attention is given to this factor the size of locomotive required and the capacity of the battery can be considerably reduced with consequent saving in cost as well as operating expenses.

Generally speaking it will be found advantageous to provide a slightly heavier and better ballasted track with curves of ample radius, especially in the case of any main haulage scheme, and any extra capital expended in obtaining these desirable conditions is soon compensated for by the many advantages gained and the appreciable reduction shown in operating costs.

It is also a fallacy that Battery Locomotives need a large output to be economical. One mine employing only 16 men below ground installed a Storage Battery Locomotive with great success. These locomotives are very suitable for conveying men to the face from the pit bottom and back at the end of the shift, and there are several instances in Australia where locomotives are used for this purpose. Where the numbers and distance warrant it, a track can be laid in the second intake airway leaving the main road free for skip hauling. Furthermore, local control instead of distant, flexibility in the event of any alteration of route and brilliant illumination add to the greater safety offered by Battery Locomotives.

Types of Locomotives

Generally speaking Battery Locomotives can be roughly divided into two types depending upon the conditions under which they are to operate. The earlier locomotives supplied in this country were installed to replace existing rope haulage systems. Locomotives for this duty vary in weight from 2½ tons up to 8 or even 10 tons. The smaller are designed for a

normal drawbar pull of 400lbs, and are suitable for handling train loads up to 20 tons on the level, and would be equipped with batteries of from 12 to 15k.w. hour capacity. The electric motor in these locomotives is usually of 6 to 10 h.p., or in some cases 2-6h.p. motors would be fitted. It is usual to provide mechanical transmission, either by means of spur gearing or by worm wheel drive, to each of the axles so that all four wheels can be utilised for tractive effort.

A typical example of this size of locomotive is that illustrated in Fig. 1 which shows a 4 ton *GREENBAT* Locomotive being one of two in use at the Lake View and Star Mine, Fimiston. These locomotives are driven by two 6h.p. motors, and have a drawbar pull of 600-1,200lbs. A canopy has been provided over the driver's well to protect him from wet and dirt.

In the case of the larger 8-10 ton Locomotives the normal drawbar pull might range from 2,000-3,000lbs., and on level track the latter represents a gross train load of 150 tons. For duties of this nature it is usual to find the locomotive equipped with two motors each of 15/20h.p. arranged for individual drive to each axle. The power would be furnished by a battery of 35-50k.w. hour capacity depending upon the operating condition. Whereas the 2½-5 ton Locomotive would operate satisfactorily on a 24 inch or 30 inch gauge track, the larger locomotives usually require a wider gauge of 36 inches, and there are several instances in this country where special tracks have been installed for 42 inch gauge, These later locomotives require a minimum radius of curvature of 15-20ft.

Gathering Locomotives

The Tramming or Gathering Locomotive is specially designed for operating where space is limited or where transport on different levels is required. Fig. 2 illustrates a 1½ton *GREENBAT* Trammer Locomotive arriving with its rake of loaded skips on the 1,8000ft. level at the Hamilton Shaft of the Great Boulder Pty .Ltd. Gold Mine, Kalgoorlie, where four similar Locomotives are also in use.

The Trammer Locomotive is constructed with a short wheel base of 24-27 inches to permit short radius curves of 10ft. radius to be negotiated, and with limited overall dimensions and for narrow gauges of 18 inches to 24 inches for working in restricted drives or headings. The transfer of these tramming locomotives in a small cage is readily accomplished by constructing the locomotive so that the driver's compartment can be folded up or the battery compartment arranged to telescope over the driver's well. By this means one trammer locomotive can be employed to operate on several different levels in the same section of a mine, and alternative trips to and from various working faces or loading points can be arranged on each of several levels as the locomotive can be easily conveyed per medium of the standard mine gauge from any one level to another.

For this reason the weight of the Trammer Locomotive is usually restricted to 1½ or 2 tons, with normal drawbar pull ranging from 300-360lbs, which is suitable for handling train loads ranging from 10-15 tons. Generally speaking, Trammer Locomotives are fitted with one 6 h.p. motor which is usually direct coupled to one axle with provision for driving the other axle either by external connecting rods or through totally enclosed spur or worm, and worm gears. The average size of battery with which a Trammer locomotive is normally fitted would range from 10-12 k.w. hours.

Motors

The Electric Motors for driving these locomotives are usually of the totally enclosed, dust and weather proof type, and series wound so as to provide the best speed-torque characteristics for this service.

Where two motors are employed these should be arranged for series parallel control, and under special circumstances, regenerative braking can be incorporated in the controller. The normal drawbar pull of the locomotive is usually based on the rating of the motor or motors, and which are generally capable of developing 200 percent. overload for short periods.

Batteries

The successful operation of any Storage Battery Locomotive is largely dependant on a satisfactory performance being obtained from the battery fitted. Detail investigation must be made of each section of the haulage system, and careful consideration given to the selection of a battery of ample capacity to meet the particular requirements. Even when these precautions have been taken it is essential that reasonable attention is given to the care and maintenance of the battery when in operation.

Batteries can be divided broadly into two distinct types the "Lead Acid" Cells and the "Nickel-Iron-Alkaline" Cells. There are at the present time many locomotives in Australia equipped with either types of batteries for each of which particular advantages are claimed.

The battery containers or boxes are usually mounted on eccentrically pivoted rollers which are fitted with ball bearings. After withdrawal of the connecting plugs and the removal of the stops, it is a few minutes' task only to remove the discharged battery and replace it with a fully charged one where operating conditions do not permit recharging being carried when the locomotive is idle.

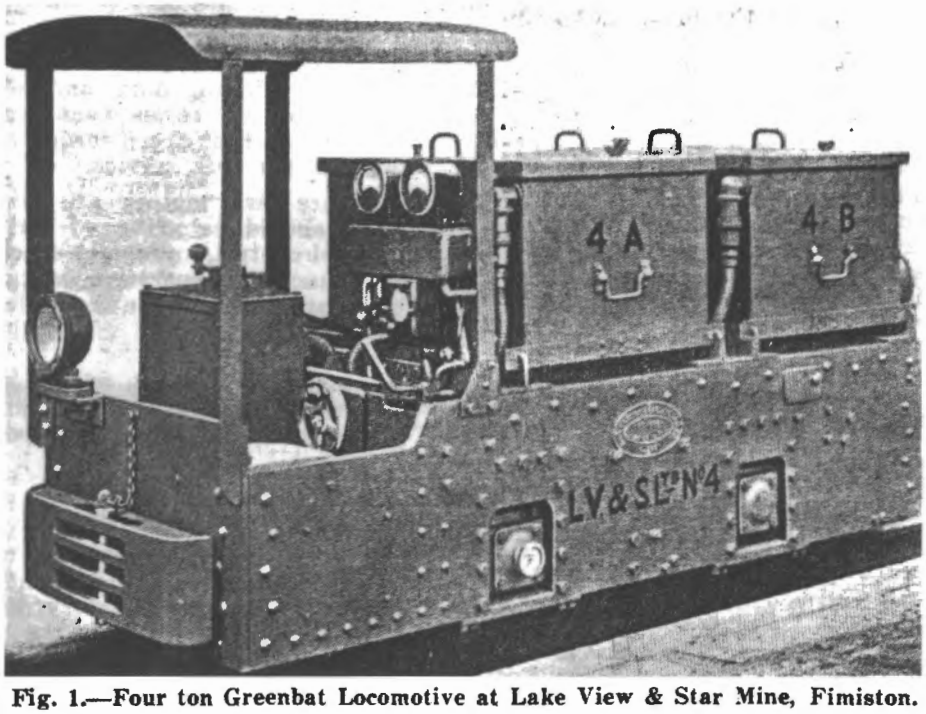


Fig. 1.—Four ton Greenbat Locomotive at Lake View & Star Mine, Fimiston.

Battery Charging Equipment

The Recharging of the Batteries in most cases is carried out underground by means of motor generator sets or mercury arc rectifiers. For charging batteries in mine locomotives it is desirable that the charging be entirely automatic. Any method that involves manual adjustment introduces additional expense as well as a human element which is often difficult to control.

In selecting the type of charging equipment to be used it is usual to ensure that this is suitable for recharging of the battery by the modified constant voltage method. The choice of charging equipment will, of course, be governed by the source of power, but if a suitable D.C. supply is available it should be used for preference. This will save investment for transforming apparatus, and will often dispose with attendants which would be required for rotating machinery.

Where D.C. Voltage is available but is of too high a value to charge direct from the supply mains, the voltage may be reduced by means of a motor generator or a balancer set. In the case of a motor generator the motor would be designed to operate from the D.C. Supply available and directly coupled to the generator which would provide the proper constant voltage for the battery.

Where A.C. power only is available, it can be converted to D.C. at suitable voltage by means of-

(a) Motor Generator Set.

(b) Rotary Converter.

(c) Mercury arc rectifier.

The motor generator set would be similar to that mentioned above except that the motor would be suitable for running off A.C. supply. The rotary converter would need to have the same characteristics on the D.C. side as the generator of a motor generator set.

Mercury arc rectifiers have a more or less drooping characteristic, that is, the D.C. voltage falls with increased output. For charging a single battery, this characteristic, with proper design, is not objectionable. If the rectifier is required for charging several batteries in parallel it should be designed for constant D.C. voltage as nearly as possible, with a fixed resistance in each charging circuit.

Control Panel

The Control Panel for use in connection with the recharging of the batteries should be designed so that one or more batteries can be charged at the same time, and so arranged that each battery when fully charged is automatically disconnected from the line and the complete plant shut down when the last battery is charged.

It is essential in every instance that a separate ammeter and regulating resistance be provided for each battery circuit.

Care and attention of Batteries and Locomotives

A Storage Battery Locomotive requires but little care or attention and usually less than that given to a pit pony. During its working life the battery only requires its daily charging when in actual service, a weekly topping up with distilled water, and occasionally the cleaning up of the top of the cells which can readily be accomplished by a jet of compressed air.

Operating Characteristics

It is difficult to lay down any definite guide as to the number of ton miles which should be obtained from any particular size of battery or locomotive as the operating conditions vary in almost every installation.

As a general guide the tractive effort required to haul the usual type of mining skip when fitted with ordinary plain bearings on a level track laid with 30lb. rails at a speed of four miles per hour may be assumed as being equivalent to 30lbs. per ton or even less when wheels or axles are fitted with suitable ball or roller bearings.

Gradients against the load call for considerable increases in the tractive effort, and it is customary to allow an additional 20lbs. for each 1 percent of grade. For example, a tractive effort of 30lbs. per ton on the level becomes 60lbs. or just double for a 1½ percent grade against the load. The weight of a locomotive for any specified performance can be determined readily from the following formula:

Weight of Locomotive

$$W = \frac{T(R+20\,G)}{448-20G}$$ For Cast Iron Wheels

or

$$W = \frac{T(R+20\,G)}{560-20\,G}$$ For Steel Wheels

"T"- Gross Weight of Trailing load on tons.

"G"- Grade in percent.

"R"- Total Tractive Effort per ton to overcome track resistance either on account of grade or curvature.

Cast iron wheels afford a running coefficient of adhesion of 20 percent of the total weight of the locomotive, and a starting coefficient of 25-30 percent, when sand is used. The steel-tyred or rolled-steel wheels normally show a running coefficient of 25 percent, and up to 33 1/3 percent for starting on sanded track.

To estimate the battery capacity required for a given service, the entire haulage should be subdivided into as many sections as there are different characteristics. By calculating the tractive effort and distance for each section, the watt-hours for each section can be obtained. The summation of the watt-hours of all the sections will give the watt-hours of total battery capacity required for the service. After having ascertained the speed and tractive effort required for each section of the working conditions it is a simple matter to calculate the actual horsepower required for the motive power to suit any particular scheme. In practice when selecting the battery capacity due allowance has to be made to compensate for the battery being called upon to supply current to the motor at and appreciably higher rate than the normal five hour discharge rate on which the rating of the battery is usually based.

The overall efficiency of conversion of the electrical output at the battery terminals to the mechanical output. As obtained at the wheels of the locomotive, will vary from 60-75 percent. An average figure of 66 2-3 percent can be usually assumed, and on this basis the watt-hours per train mile is equal to three times the total tractive effort. Under average working conditions it is customary to allow 120-150 watt-hours in battery capacity for each gross ton mile covered by the locomotive and its rake of skips. But to meet special conditions this allowance may be increased to 200 watt-hours per gross ton mile depending upon circumstances.

As mentioned above the sizes of batteries fitted may range from 10kw hours up to 50kw hours with corresponding variations from 80-400 ton miles per charge. In the belief that no review of this nature is of interest to the average reader unless some reference is made to the £.s.d. aspect of the matter, it is hoped that the following particulars will be of service to those who have continued this far.

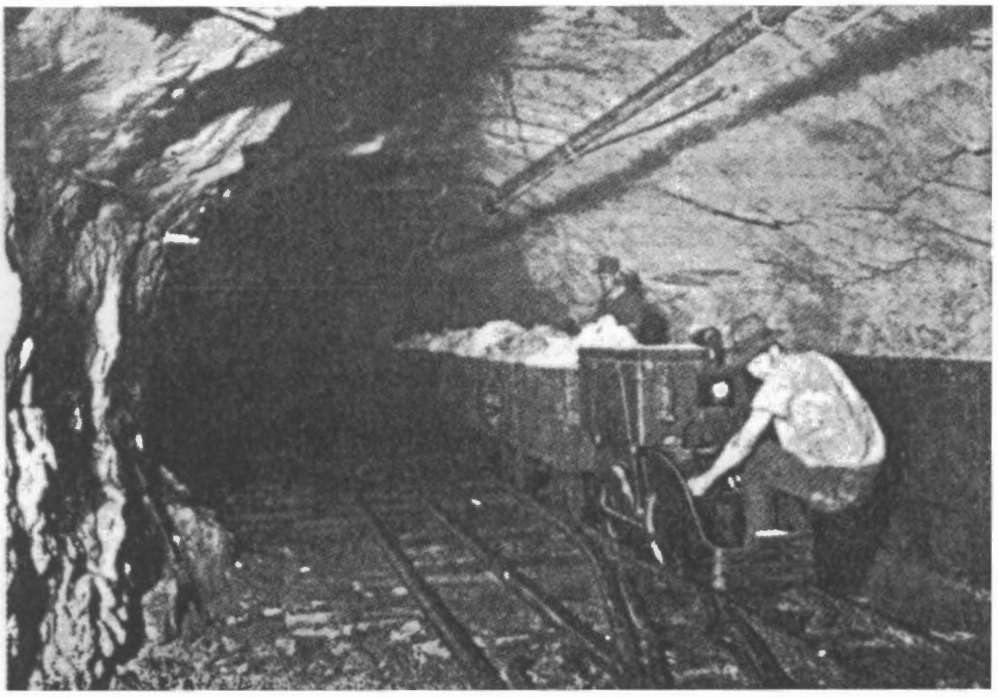


Fig. 2.
1½ ton Greenbat Tramming Locomotive on the 1,800 foot level Hamilton Shaft, Great Boulder Pty. Ltd. Mine, Kalgoorlie.

In the case of Electric Storage Battery Locomotives one is not concerned with the pounds or shillings or even pence, but only in fractions of pence when considering haulage costs on ton mile bases. It will, perhaps, be simpler to take as an example a hypothetical case based on results as obtained from an existing installation.

Assuming that an A.C. Motor-Generator Set with an overall efficiency of 70 percent is supplied with current at 3d. a unit and this is used for charging a battery of which the overall watt-hour efficiency is usually about 73 percent. A total of 30 units would be required for recharging a battery of 15 k.w. hours, and the cost at 3d. per unit would therefore amount to 7/6. A 3½ ton Locomotive fitted with a battery of 15k.w hours capacity is today averaging over 120 nett ton miles of useful work per battery charge, which, at a cost of 7/6 for current is equivalent to a haulage cost of 3/4d. per ton mile. On the basis for a 1,000ft. haul on level track from loading point to shaft, this would represent approximately 0.15d. per ton or 20 tons of ore hauled over 1,000ft. for 3d.

The accompanying list of Gold Mines in Western Australia showing the number and type of Storage Battery Locomotives in operation may prove of interest and serve to indicate the extent to which the advantages possessed by this form of haulage have been realised.

List of Electric Storage Battery Locomotives Operating in Western Australian Gold Mines

Mine	No. in use	Make of Locomotive	Type	Working Weight (Tons)	Gauge	Type of Battery
Big Bell Mines Limited	3	Atlas	Main Haulage	3	24in	Lead
Central Norseman Gold Corporation, N.L.	3	Greenbat	Trammer	1½	18in	Lead
Gold Mines of Kalgoorlie Ltd	1	Greenbat	Main Haulage	3½	24in	Edison
Gold Mines of Kalgoorlie Ltd	1	Mancha	Trammer	1½	24in	Lead
Great Boulder Pty. Gold Mines Ltd.	5	Greenbat	Trammer	1½	18in	Lead & Edison
Great Boulder Pty. Gold Mines Ltd.	1	B.E.V.	Main Haulage	2½	18in	Lead & Edison
Kalgoorlie Enterprise Mines Ltd.	1	Mancha	Trammer	1½	18in	Lead
Lake View & Star Ltd.	2	Greenbat	Main Haulage	4½	20in	Lead & Edison
Lake View & Star Ltd.	10	Greenbat	Trammer	2¼	20in	Lead & Edison
Lake View & Star Ltd.	2	General Electric	Trammer	2	20in	Lead & Edison
Triton Gold Mines, N.L.	5	Greenbat	Trammer	1½	18in	Lead
Wiluna Gold Mines Ltd.	5	English Electric	Main Haulage	4	24in	Lead
Wiluna Gold Mines Ltd.	1	Greenbat	Trammer	3¼	24in	Lead
Wiluna Gold Mines Ltd.	2	Greenbat	Trammer	1¾	24in	Lead

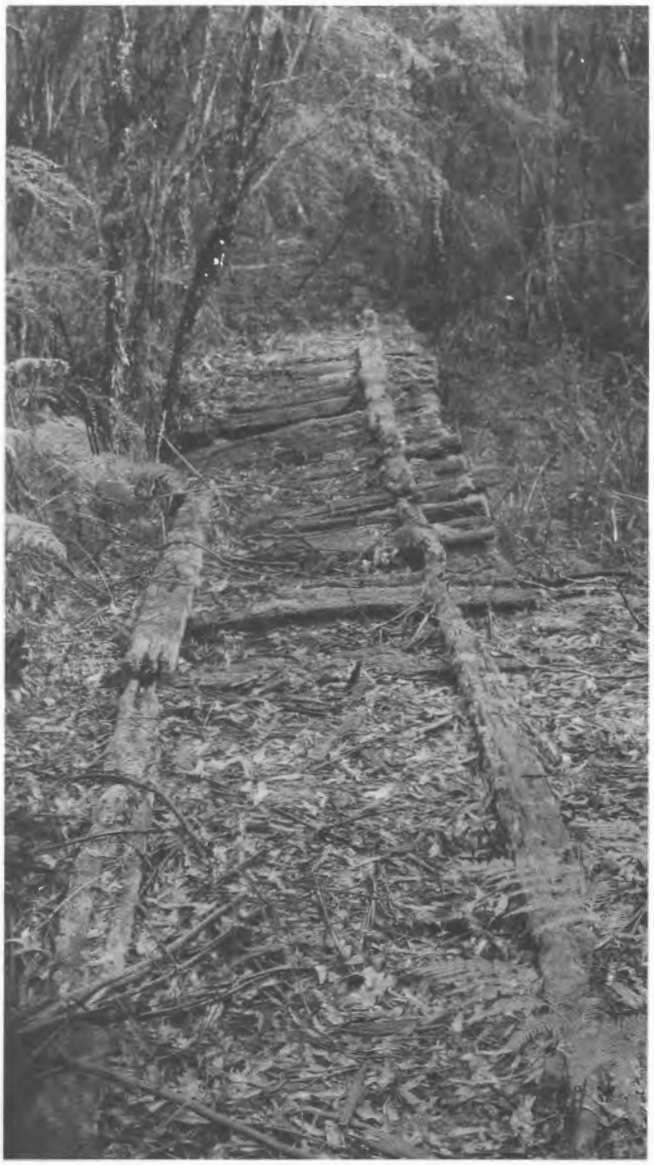
A visit to Erica in May 2006

by Peter Evans, Colin Harvey and Mike McCarthy

In January 2006, a major bushfire swept from the Beynons Creek, west of Erica, in a southeasterly direction towards Yallourn North. Approximately 16,000 hectares were burned through, over a distance of approximately 20km. A study of the fire map revealed that a number of former sawmilling areas that featured light railway activity were affected and a commitment was made by a few Melbourne members to visit the region at the earliest opportunity to see what had been revealed.

The opportunity came on the 20th of May when Peter Evans, Colin Harvey and Mike McCarthy met at Mike's place and headed off down the Princes Highway and then north from Moe towards the fire-burnt area near Erica. We arrived at Erica in time for a cup of tea before getting down and dirty about 10 am.

One of several long makeups that can be found within 100 metres or so of the Seninis Track crossing on Kirchhubel's log tramway; 20 May 2006. Photo: M McCarthy



The same makeup photographed in January 1974. At this time the tramway was virtually intact over its length. Photo: M McCarthy

We had a number of objectives for the visit including an inspection of the affected portion of the Tyers Valley Tramway, Morgan's area along Beynons Creek on the western branch of the Tyers Valley Tramway, the site of Kirchhubel's mill and tram out of Moondarra and the various mills and trams that were once located in the vicinity of Gould. The key question, of course, was just how much of the area we would get to see.

Before heading into the fire zones we had a look around Erica and found the McCormack-Deering rail tractor with its log bogies on its short length of track next to the sports-ground in Erica where it has resided for many years. We also visited the site of the former State mill at Erica, which had always presented much to see in the past. It was here that Climax 1694 found a home for many years along with the two TACL tractors from the closed Tyers Valley Tramway. Tramway remains throughout the mill site were always interesting to inspect as well as the mill itself. Unfortunately all had gone. We drove along the tramway formations that once brought log trucks into the mill but the entire area is now parkland leaving virtually nothing other than the formations as evidence of its former use.

Disappointed at our Erica reunion, we drove back down south and then turned right at Collins Siding to head out towards Tyers Junction.

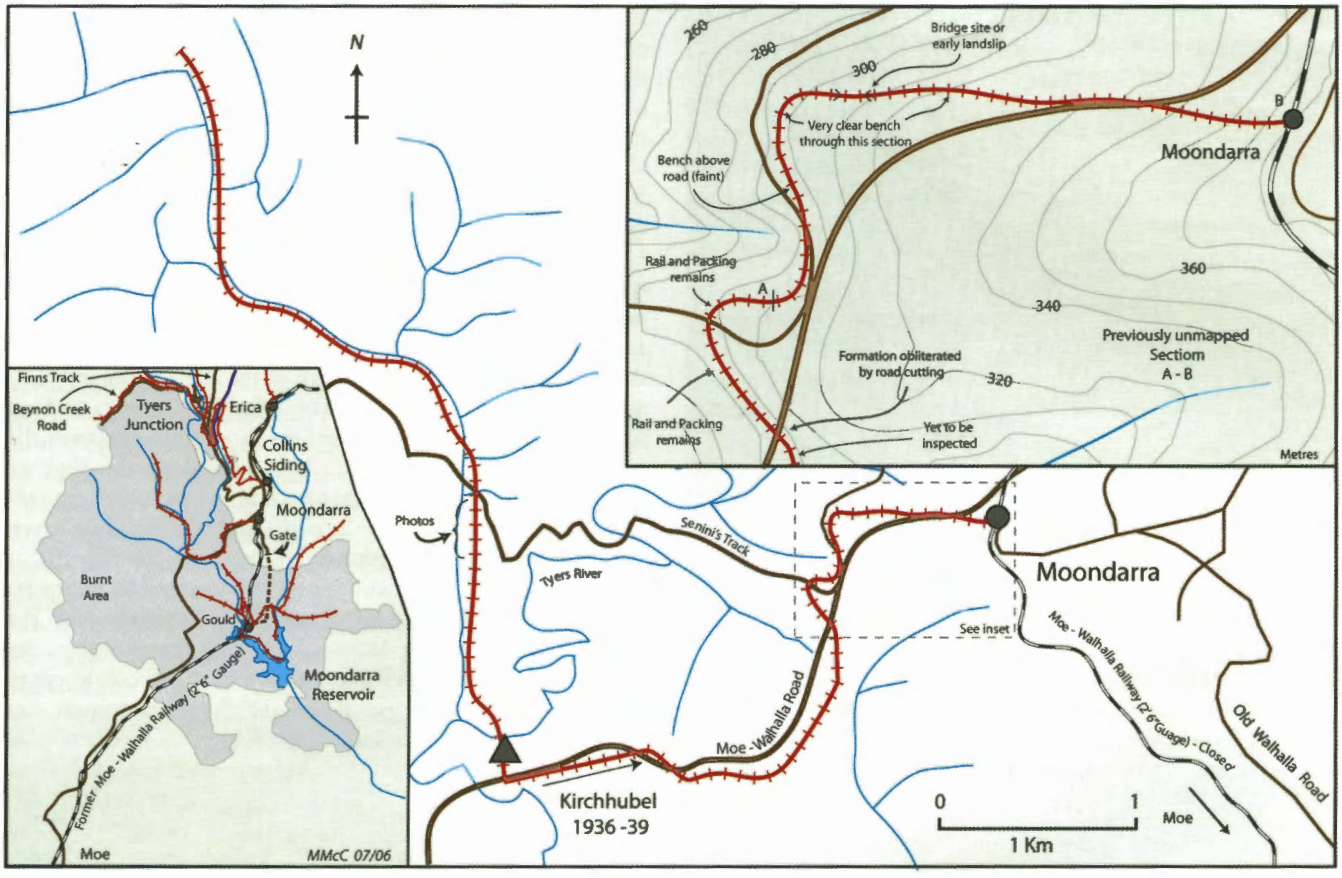
We came to our first fire affected area where Finns Track meets the road to Tyers Junction. It was at this point that the Tyers Valley Tramway crossed the road and followed an alignment on the south side into the former depot site. This was easily found as it is now a maintained walking track. However, our interest at this point was in the era prior to the Tyers Valley Tramway when Collins operated his wooden rail tramway out into the same area. There was once an incline used by Collins to carry timber over the ridge that Finns Track traverses. The burnt forest in this area held promise that we might find something but the fire stopped short of the point where it crossed, so the thick scrub was still prevalent. Not to be daunted we still took the opportunity to hunt for remains of the incline but unfortunately, as is often the case, we found nothing.

Back in the car we drove down past the site of Christie's bridge (now gone) to Tyers Junction and into the former depot area to find that nothing really had changed in the many years since we were last there. Of course, no signs were left of the structures including the engine shed as these had disappeared years ago. However, we noted that the bridges over the creeks that the Tyers Valley Tramway had once used, but which had been refurbished as part of the Scout camp that now occupies the site, could still be found. We then ventured into four-wheel-drive country along the road to Morgan's, which follows the western branch of the Tyers River (more or less). Unfortunately the road was shut at Morgans with a sign informing those who ventured into the area that this was now private property. Consequently, we could not venture into the former mill site. This was bad luck as there had always been plenty to see in the past and it was somewhat frustrating that what was previously easily accessible was now denied to us.

We drove out along Beynons Creek Road, which was the northwest edge of the fire zone. The road itself followed the alignment of one of Morgan's log tramways. We travelled for about a kilometre or so but found little as the construction of the road destroyed most evidence of the tramway many years ago. We decided to abandon the Tyers Valley area and head south to Gould where the fire was at its strongest with the hope that there might be much to see. Along the way, we stopped at the former Moondarra Station site, which features wonderful views across the fire-affected country, and it was here that we enjoyed our lunch.

Suitably refuelled, we continued our journey to the south with the hope of being able to get close to Gould with the aim of possibly visiting Morgan's old mill site as well as the former station site. Both locations have been difficult to get to in the past as the road was closed and the relevant authority had erected a gate to block access. However, the gate was quite

Kirchhubel's log tramway was well constructed with many shallow cuttings and low makeups to provide even grades and curves for the Day's tractor that worked the line. This cutting on a curve was photographed about 200 metres south of the Seninis Track crossing. 20 May 2006. Photo: M McCarthy



close to the former Gould township so we felt that we might be able to walk to where we needed to get. Alas, this was not the case. New gates now block the former main road many kilometres north of the former station site so once again we were thwarted from getting close to the areas we wished to visit. An official approach may be necessary to gain access to this area sometime soon. We chose then to head back to the main road crossing over the Tyers River that was within metres of the former Kirchhubel mill site. However, along the way we ventured down Seninis Track to visit the log line that ran from Kirchhubel's mill and the timber export line, which also crossed this road.

We explored the log line first and found that the area had been well and truly burnt through and much of the thick scrub that made going hard in this area in the past had been removed. So we ventured first to the south along the log line that led to the sawmill and it was here that we found some of the more interesting findings of the day. The tramway formation was very easily followed with sleepers and packing evident along the way as well as some sections of wooden rail with the odd rail or two in near to perfect condition. This is remarkable given that it has been close to 70 years since the tramway saw a log truck. Perhaps the more significant remains were a series of shallow cuttings and burnt out culverts that showed evidence of low-level crib-work. This tramway had been well constructed and great attention had been given to maintaining an even grade along the alignment, so small cuttings and low bridging were used in abundance.

Appropriate photographs were taken prior to our retracing footsteps along the tramway alignment and across Seninis Track to inspect remains to the north. Unfortunately, although rails and sleepers lined the route and we came across a shallow cutting, as well as a bench along which the tramway ran above Ti-Tree Creek, the tramway remains came to a halt at a creek crossing approximately 100m north of Seninis Track. The creek crossing marked the edge of the fire-affected area and on the other side, because of the scrub, we could see virtually nothing, and there was no sign of the former bridge works. An interesting aspect of the area in general is the patchiness of what is left. Some sections show significant remnants with rails, sleepers, culverts and bridge works whereas others, which featured bridges and culverts in the past, presented nothing in the way of relics today. The answer of course is that the 2006 fire was not the first to pass through here. The notorious 1939 fire destroyed much of the tramway (but spared the mill) and led to the closure of the operation. Some structures were burnt at that time and subsequently disintegrated whereas others survived those fires only to be caught in this most recent conflagration.

After returning to the car we headed back along Seninis Track to inspect the timber export tram which crossed the track only a hundred metres or so from the main Walhalla Road. Our purpose in visiting this section had greater meaning as we had never properly mapped the tramway between this point and Moondarra station due to the density of the forest beyond the first 50 metres from the track. A contemporary one inch to the mile map included the tramway but it was obviously inaccurate.

Rather than do the sensible thing and follow the tramway to see where it took us, our driver (Mike) decided in the first instance to follow another track that heads north from the Walhalla Road only a few metres from the Seninis Track intersection. He felt (correctly as it turned out) that the tramway must have crossed the road at some point on its journey to Moondarra Station, and given that the area had been burnt right through with what was very clearly a very hot bushfire, he thought there was a good chance that we would come across the alignment.

A fruitless hour searching the slopes above and below this track provided nothing other than a lot of soot and frustration.

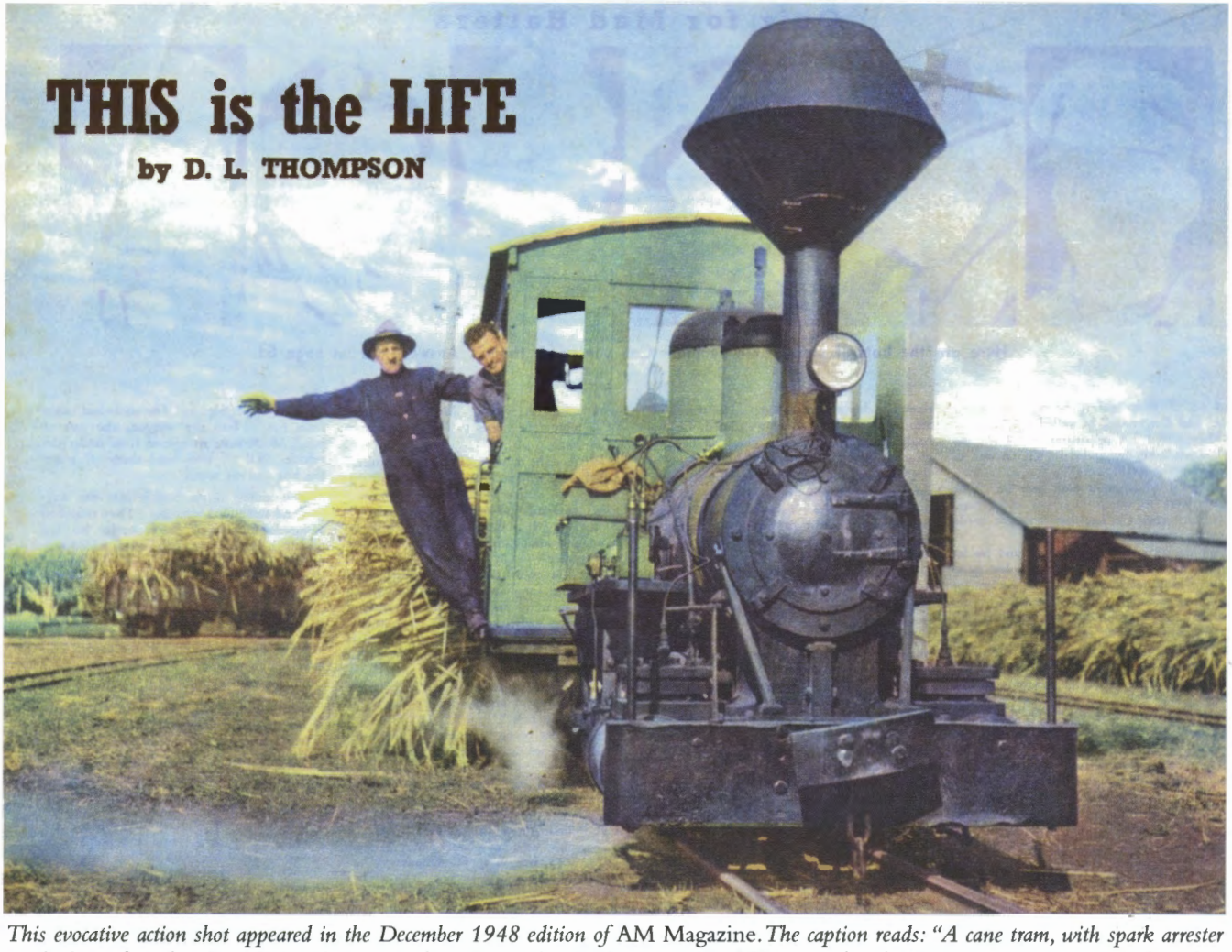
However, Peter and Colin, showing greater common sense, ventured back to Seninis Track on foot and then followed the tram from that point. They discovered that it had swung sharply around the edge of a spur to cross the road that we had passed over only a few metres from its junction with the Walhalla Road. The side cutting was very shallow and not evident from the car window but on foot, all was revealed. Peter and Colin followed the alignment for a short distance to a point above where our car had been parked and then summonsed Mike, who had been grovelling around in the depths of the valley below trying to find the alignment, to join them higher up the hill side.

The full party then followed the formation around the side of the hill just below the Walhalla Road and with suitable GPS readings taken were able to map the alignment of the tramway accurately to a point immediately below the station and quite close to the Walhalla Road. The area had been burnt through very thoroughly and, it was interesting that no sign of culverts or low bridging could be found although it was very clear that they had once existed. Again, presumably, the 1939 fires destroyed everything leaving no evidence of wooden structures to this day. In one section, in particular, a landslip may have changed the shape of things as well.

Back at the car the party headed back down the Walhalla Road to visit the mill site close to the Tyers River bridge. Much had changed at this location over the years since our last visit. Aside from the rusted remnants of water tanks, part of the old boiler and some brickwork lying about, which had been associated with the old boiler mounting, little remained of the old mill. In the past, sections of wooden rail tramway, including point-work, lay on the ground. However, the activity of the State electricity authority had destroyed most of what the sawmillers had left and nature clearly had completed the job. Even the old tramway bridge across the river that was still in a reasonably solid condition in the 1970s had disappeared leaving no sign. However, high water levels at this time may have been covering remnants in the river. A cup of tea back at the car and our party set off back to home.

We were reflecting along the way on how the day was so typical of many such visits over the years. It was always a mixture of discovery, disappointment and frustration. We had a great day in the fresh air in the sunshine and found some interesting relics, which in another six months or so nature will obscure until the next fire comes through, so we were well satisfied with what we found. Nevertheless, it was also sad to realise that many of the relics that we could find 30 years ago had gone and that we could not get access to some very interesting areas, where we could expect fascinating remains. It emphasises the need to grab every opportunity to record these things. Time (and nature) does not stand still. Regardless, we all agreed that it was a great day and we look forward to the next opportunity.

FROM THE ARCHIVES



This evocative action shot appeared in the December 1948 edition of AM Magazine. *The caption reads: "A cane tram, with spark arrester on the loco's funnel, pulls 65 tons of cane into the Fairymead mill. Fairymead has 100 miles of track, Bingera 80, radiating into the fields, where horses shunt trucks ready for the engines." The locomotive is Fairymead number 3, a 7-ton 0-4-2T built by Baldwin (58286 of 1925). Submitted to* Light Railways *by Greg Ray.*

Industrial Railway NEWS

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NEW SOUTH WALES

BLUESCOPE STEEL LTD, Port Kembla

(see LR 190 p.16)
1435mm gauge
It was recently announced that Pacific National will be taking over rail operations at the Port Kembla steelworks from early 2007. It is unknown what this means for the existing English Electric locomotive fleet but there are probably not many standard gauge locomotives available to PN that would be suitable to replace them because of the tight curves that have to be negotiated.
"Bob" 10/06

SCT LOGISTICS, Parkes

1435mm gauge
SCT is establishing a new terminal at Parkes and in mid-October a transfer train from Melbourne delivered a shunting locomotive for use there. It is Clyde Bo-Bo DE T414 *Georgia McKinnon* (56-111 of 1956 rebuilt RTS Islington, 2006). This was originally supplied to BHP as DE02, a 3ft 6ins gauge locomotive for the Whyalla iron ore line in South Australia. In 1968 it was standard gauged for use on the BHP Coffin Bay mineral line at Port Lincoln, and ended up by 1994 dismantled at Whyalla. Its carcass was retained by a succession of companies and now, amazingly, it has re-emerged transformed and ready for a new life.
Richard Montgomery 9/06; Chris Nuthall (Ausloco e-group) 10/06; *MotivePOWER* 48.

QUEENSLAND

BUNDABERG SUGAR LTD, Bingera Mill

(see LR 191 p.17)
610mm gauge
Com-Eng 0-6-0DH *INVICTA* (A1513 of 1956 rebuilt Bundaberg Foundry 2001) became unserviceable with a leaking brake cylinder during the season and was replaced by Com-Eng 0-6-0DH *BURNETT* (AH2967 of 1963), which returned to Bingera after many years at Qunaba in the Millaquin Mill area. It was stationed at Wallaville depot and was observed at work at McIlwraith on 21 October.
With cane from areas on the Wallaville line now going by road transport to Isis Mill, a number of sidings and loops are no longer in use for cane loading. Old Fairymead bins fitted with Willison couplings are stored out of use at Macklins, Lallewon and both loops at Drinan, while the points for the Delan and Bungadoo sidings have been removed.
There are at least eight locomotives that appear to be spare or out of use at Bingera. The latest addition to this group appears to be Com-Eng 0-6-0DH *SHARON* (A1935 of 1959) whose couplers have been removed, quite possibly for fitting to *BURNETT*.
Locomotives based at the old Fairymead mill for the 2006 crush were

55	0-6-0DH	Clyde	DHI.6	1954
HINKLER	0-6-0DH	Clyde	56-89	1956
60	0-6-0DH	Clyde	60-219	1960
PERRY	0-6-0DH	EM Baldwin	6/1576.1 8.66	1966
MOORLAND	B-B DH	EM Baldwin	5565.1 10.74	1974
BUCCA	B-B DH	EM Baldwin	6104.1 8.75	1975
BOOYAN	B-B DH	B'berg Fdry	001	1991

The three Clydes were noted spare in the locoshed in late October with *PERRY* hauling cane in the Waterview area.
Lincoln Driver 9/06, 10/06; Editor 10/06

BUNDABERG SUGAR LTD, Millaquin Mill

(see LR 190 p.16)
610mm gauge
The route of the new line to connect the mill yard to the Burnett River ferry terminal yard at Strathdees has been pegged out and it is expected that construction will commence before the end of 2006.
Com-Eng 0-6-0DH *BURNETT* (AH2967 of 1963) returned to Bingera Mill during the 2006 season to cover a breakdown. Since its transfer in 1980, it had been based at Qunaba.

Pioneer Mill's 3ft 6ins gauge Clyde Model DHI-71 0-6-0DH locomotives are an interesting contrast to the narrower design running on 2ft gauge lines. Here MAIDAVALE *(63-287 of 1963) is pictured on dual gauge track at Klondyke Junction on 1 September 2006.* *Photo: Carl Millington*

A very large bogie flat wagon, approximately 15m in length, was noted parked at Qunaba. It is believed that it has been here for some time and information on its intended purpose would be welcome.
Editor 10/06; Lincoln Driver 10/06

BUNDABERG SUGAR LTD, Innisfail district
(see LR 191 p.17)
610mm gauge
The cyclone-damaged locoshed at the Silkwood depot in the South Johnstone Mill area has been rebuilt. At the start of September, this was a Com-Eng 0-6-0DH depot with the locomotives based there being multi-pair 1 *JOSEPHINE* (A1821 OF 1957) & *RUSSELL* (A2027 of 1958), with 22 (AK3675 of 1964) and 3 (AD1452 of 1961). 22 had been repainted in all over yellow and still carried its old number 2 number plate, which had been repainted and polished, while 3 is officially numbered 23. By the end of the same month, Silkwood had become a Clyde 0-6-0DH depot, with 12 (55-60 of 1955), 14 (63-288 of 1963) and 20 (63-289 of 1963) in residence.
Babinda Mill now appears to control all the old Goondi lines, the only exception being those east of Mitchell's Loop.
Com-Eng 0-6-0DH locomotives 31 (C1125 of 1957) and 36 (A1102 of 1955) have been stored for some time out of use at Babinda awaiting rebuilding. It is now stated that 4 *HARVEY* (AD1138 of 1960) and 5 *BRAMSTON* (AH2460 of 1962) will be rebuilt in their place.
Carl Millington 9/06; Shane Yore 10/06; Peter Attenborough 10/06

CSR LTD, Herbert River Mills
(see LR 191 p.18)
610mm gauge
Locomotive and brake wagon breakdowns and wet weather have beset the crushing season, resulting in some dissatisfaction among farmers anxious to get their crop off. Some serious washouts occurred as a result of heavy rain at the start of September.
Quite remarkably, three "foreign" locomotives as follows arrived at Victoria mill during September and October to supplement the loco fleet:

D1	0-6-0DH	Clyde	56-101	1956
	ex Plane Creek Mill 17/9/06			
DAINTREE	B-B DH	EM Baldwin	7303.1 7.77	1977
	ex Mossman Mill 28/10/06			
KALAMIA	0-6-0DH	Clyde	67-669	1967
	ex Invicta Mill 31/10/06			

D1 was initially sent to cover a loco failure at the bulk sugar terminal at Lucinda for a few days and after some mechanical attention was used on navvy duties. Its wheel back-to-back measurements mean that it is not completely suitable for use in the Herbert River. *DAINTREE* entered service with new couplings on 30 October and *KALAMIA* on 1 November.
EM Baldwin 0-6-0DH *HOBART* (4413.1 7.72 of 1972) continued to be called back to Victoria Mill from Macknade to cover loco failures. Five return trips of this kind took place between 12 September and 1 November. Clyde 0-6-0DH *INGHAM* (64-382 of 1964) returned from Macknade to Victoria around 22 September and was declared a failure there. Its engine and converter were removed and fitted to Clyde 0-6-0DH *LUCINDA* (65-436 of 1965). This locomotive had suffered a seized engine in early September and was back in service on 13 October. *INGHAM* should receive a new engine and converter during the slack season. Clyde 0-6-0DH *CANBERRA* (65-433 of 1965) was on loan to the Lucinda Sugar Terminal on 17-18 September and worked at Macknade from 22 to 28 September.
EM Baldwin B-B DH locomotives *HOMEBUSH II* (6400.1 4.76 of 1976) and *MAITLAND* (7070.1 3.77 of 1977) both successfully entered service in RSU mode during September. *MAITLAND* failed on a rake of fulls near the Herbert River Bridge at Abergowrie on 1 October. EM Baldwin B-B DH *DARWIN* (6171.1.9.75 of 1975) was sent to the rescue but could not get the heavy train started. As a result, EM Baldwin B-B DH *WALLAMAN* (6400.3 4.76 of 1976) provided assistance at the head end as far as McKell's resulting in a "triple header", even if only two locomotives were working.
Two bins were notified under modification in the Victoria bin shop in late September. Angle iron framed sides have been fitted with the tops being longer than the bottoms, resulting in the ends of the bin being angled out to increase capacity. The side and floor metal mesh has been replaced with a plastic mesh, which is in one whole piece down one side of the bin, across the bottom, and then up the other side.
On 28 September, Hudswell Clarke 0-6-0 *HOMEBUSH* (1067 of 1914) was retrieved from its display shed by *WALLAMAN*. It received some attention in the locoshed in preparation

The magnificent sight of South Johnstone Mill's EM Baldwin B-B DH LIVERPOOL *(10385.1 8.82 of 1982) powering its train up the Eight Mile Range from Japoon on 26 September 2006. Bundaberg Sugar paints the loco bonnet tops black to reduce reflected glare.* *Photo: Scott Jesser*

for use in the Maraka Festival on 21 October, and was trialled on 19 October. The festival running was very successful with full trains operating between the mill and Nyanza 3 siding. Nearly 500 passengers were carried on 8 trips in the three hours that the train ran.
Townsville Bulletin 16/9/06; Chris Hart 9/06; 10/06, 11/06; Steven Allan 9.06, 10/06, 11/06; Peter Attenborough 10/06; Brett Geraghty 10/06

CSR LTD, Kalamia Mill
(see LR 187 p.20)
610mm gauge
Com-Eng 0-6-0DH *DELTA* (FD5094 of 1965) has been painted all over yellow with red and white headstocks, the same scheme as recently introduced at Invicta Mill.
Clyde 0-6-0DH *KALAMIA* (Clyde 67-669 of 1967) was transferred to Invicta Mill on 11 September.
Carl Millington 9/06; Jason Lee 9/06

CSR PLANE CREEK PTY LTD, Sarina
(see LR 188 p.21)
610mm gauge
Clyde 0-6-0DH D1 (56-101 of 1956) was transferred to Victoria Mill in mid-September.
Chris Hart 9/06

HAUGHTON SUGAR CO PTY LTD, Invicta Mill, Giru
(see LR 191 p.18)
610mm gauge
EM Baldwin B-B DH *BURDEKIN* (10215.1 7.82 of 1982) suffered a broken axle on 8 September, leading to the transfer on 11 September of Clyde 0-6-0DH *KALAMIA* (Clyde 67-669 of 1967) from Kalamia Mill. It was fitted with extended exhausts and new couplers before seeing some use on short runs close to the mill. Its slow speed in comparison to the rest of the fleet made it difficult to accommodate in scheduling. *KALAMIA* was not destined to operate at Invicta Mill for long. On 31 October, following *BURDEKIN*'s return to service two weeks earlier, it left for Victoria Mill.
The new MTU 2000 engine fitted to Walkers B-B DH *PIRALKO* (670 of 1971 rebuilt Bundaberg Foundry 1995) has proved to be very successful, after various teething problems were dealt with. The engine is rated at 900hp and some transmission settings have had to be changed but the result is an extremely powerful unit. Two more similar engines will be fitted for the 2007 season, to Walkers B-B DH *MINKOM* (710 of 1973) and Walkers B-B DH *HODEL* (687 of 1972), both rebuilt by the Bundaberg Foundry in 1995. *MINKOM* suffered a serious engine failure on 26 September. A reconditioned Detroit 12V92TA engine was leased from Mackay Sugar and installed into the locomotive in early October for use until the end of the season.
Westfalia B-B DH *STRATHALBYN* (13863.1 8.91 of 1991) will be getting a complete overhaul before

Top: *Invicta Mill's Walkers B-B DH* CLARE *(655 of 1970 rebuilt Tulk Goninan 1995) runs through bushland near Clare as it hauls its long train towards the mill on 29 July 2006. Photo: Scott Jesser*
Centre: *Plane Creek Mill's Clyde 0-6-0DH D1 (56-101 of 1956) is far from home at Moore's Siding in Victoria Mill's Abergowrie district on 1 November 2006. In tow is a ballast plough made from Motor Rail "Simplex" 4wDM 3717 of 1925. Photo: Brett Geraghty* ***Above:*** *Victoria Mill's preserved Hudswell Clarke 0-6-0* HOMEBUSH *(1067 of 1914) ran passenger trains for Ingham's annual Maraka Festival on 21 October 2006. Here it provides a smoky trail for its delighted admirers as it runs between Nyanza 1 and 2 Sidings. Photo: Brett Geraghty*

the 2007 season. It will be rewired, have its centre dash removed and RSU equipment fitted. One of the major issues facing RSU operations of Baldwin locomotives has been that of visibility, as they are not as high as the Walkers locomotives. This has been overcome at Inkerman Mill by fitting closed circuit TV cameras above either end of the loco cab and installing screens inside. It is anticipated that a similar arrangement will be adopted for use with *STRATHALBYN*.
Jason Lee 9/06, 10/06; Carl Millington 9/06

MACKAY SUGAR CO-OPERATIVE ASSOCIATION LTD
(see LR 191 p.18)
610mm gauge
Com-Eng 0-6-0DH *ETON* (FB3170 of 1963) was sent temporarily from Pleystowe to Farleigh Mill around the end of August to assist following a converter failure in Clyde 0-6-0DH *ALEXANDRA* (61-235 of 1961). Com-Eng 0-6-0DH *PIONEER* (AI2358 of 1962) was in use hauling cane at Marian Mill by late September. At the same time, Clyde 0-6-0DH *HABANA* (60-215 of 1960) was noted working as a single unit from Marian Mill.
On 30 September Pleystowe Mill's Walkers B-B DH *BALBERRA* (657 of 1970 rebuilt Tulk Goninan 1994) derailed a rear bogie while hauling empties in the Palms area. When it reached a series of box culverts the locomotive rolled over into a gully and ended up almost upside down. The locomotive was expected to be out of service until the end of the season and there was even speculation as to whether it would be replaced by a new rebuild from the locomotives stored at North Eton.
Carl Millington 9/06; Brett Geraghty 9/06

MOSSMAN CENTRAL MILL CO LTD
(see LR 186 p.22)
610mm gauge
Mossman Mill experienced a very poor crush in 2006, finishing on 26 October with only about 450,000 tonnes of cane crushed.
Almost as soon as the crush concluded, EM Baldwin B-B DH *DAINTREE* (7303.1 17.77) was consigned to Victoria Mill where it was to be on lease until the end of the season.
ABC Rural Report 19/10/06 via Chris Hart; Brett Geraghty 10/06

PIONEER SUGAR MILLS LTD, Pioneer Mill
(see LR 191 p.20)
1067mm gauge
Further modifications are planned for the two Walkers B-B DH locomotives, *JARDINE* (592 of 1968) and *JERONA* (647 of 1970), in the coming slack season. Their cabs will be relocated to one end of the frame, similar to most 2ft gauge Walkers rebuilds, and they will be getting a fully digital driving console.
Jason 10/06

SUGAR TERMINALS LTD, Lucinda
(see LR 155 p.21)
610mm gauge
On 16 September, Com-Eng 0-6-0DH G1023 of 1958 broke down, leading to the emergency loan of Clyde 0-6-0DH *CANBERRA* (65-433 of 1965) from Victoria Mill the following day. On 17 September, Plane Creek Mill's Clyde 0-6-0DH D1 (56-101 of 1956) arrived at Victoria Mill for temporary use at Lucinda, arriving on 18 September and returning to Victoria on 25 September following repairs to the Com-Eng.
Chris Hart 9/06; Steven Allan 9/06

SOUTH AUSTRALIA

GENESEE AND WYOMING AUSTRALIA PTY LTD, Whyalla
(see LR 187 p.21)
1067 and 1435mm gauge
This company is the successor of Australian Southern Railroad in operating the mining and steelworks railways at Whyalla for OneSteel Ltd. OneSteel has completed an upgrade of the railway to the mine. The delivery of 56 new wagons for carrying iron ore fines and the upgrade of 75 existing wagons is complete.
OneSteel Annual Report 2006 via David Burke

WESTERN AUSTRALIA

BHP BILLITON IRON ORE PTY LTD
(see LR 191 p.21)
1435mm gauge
One of the new Electro-Motive Canada Co-Co DE locomotives for BHP, temporarily numbered EMDX1001, was noted in Denver, Colorado around the end of September en route to the National Railroad Test Center facility at Pueblo. The first shipment of the ten locomotives on order is anticipated to depart Canada around 23 December, numbered from 4314.
United Group Rail has announced the awarding of an order by BHP for 480 iron ore gondola wagons for the Pilbara. They will be built by

Industrial Railway NEWS

United at Bassendean and will incorporate new design heavy axle-load bogies from the Standard Car Truck Company.
Richard Montgomery 10/06; Tony Burgess 10/06; United Group Ltd media release 20/9/06

LEIGHTON / KUMAGAI JOINT VENTURE, Perth Metro Rail Tunnel
(see LR 191 p.21)
900mm gauge
The completion of tunnelling took place when the tunnel boring machine broke through at Roe Street on 24 October, completing its second 770m run from Esplanade Station.
Western Australian Government media statement 27/10/06

THE PILBARA INFRASTRUCTURE PTY LTD
1435mm gauge
This wholly-owned subsidiary of the Fortescue Metals group (see LR 188 p.22) has placed an order with United Group Rail for 15 new GE Bo-Bo DE Dash 9 locomotives.
United Group Ltd media release 20/9/06

PILBARA RAIL
(see LR 190 p.21)
1435mm gauge
United Group Rail has been awarded a contract for 10 of GE Transportation's latest Evolution Series locomotives. It has been suggested that these units will be the largest in the world.
United Group Ltd media release 24/10/06; Richard Montgomery 10/06

A north Queensland scene that is inexorably becoming more rare. A tractor hauls bins through a patch of tropical rainforest over a creek bridge on Thomason's horse line in the Mulgrave Mill area on 3 October 2006. These farmer-owned lines connecting with the mill tracks were once common in many mill areas. *Photo: Tom Porritt*

Top: *Labasa Mill's Clyde 0-6-0DH 9 makes plenty of blue smoke as it heads towards the mill from the east, beginning its ascent towards Vuo Cutting, 3 October 2006.* ***Right:*** *On the Western line, Penang Mill's Baguley-Drewry 0-6-0DH 9 interrupts its journey towards the mill for an emergency refill of its radiator from a nearby well, 4 October 2006.* ***Below:*** *Lautoka's EM Baldwin 0-6-0DH 16 leads its rake of empty trucks through Lomaloma on 7 October 2006 while Clyde Queensland linecar 124 (built 1975) stands by. Photos: John Browning*

FRAGILE IDYLL
Fiji October 2006

by John Browning

A most enjoyable week at the start of October demonstrated that a warm welcome and friendliness everywhere is still a feature of the Fijian sugar industry. It also revealed that rail operations have deteriorated in the last 12 years.

The general state of maintenance is depressing, with significant numbers of locomotives out of use. This includes many locomotives under repair but held up awaiting parts. In addition, loco failures in service seem to be an all too regular occurrence. The whole-stick cane truck fleet is generally in poor repair, with lack of funds for maintenance exacerbated by the abuse suffered from farmers. Some of this abuse comes from a lack of rail infrastructure. For example, a lack of siding capacity means that rakes of empty trucks are commonly hauled off the track and across country by tractors.

Derailments are very common, with many trucks at any one time lying out of use at the mill and beside the line. The chopped cane bins that were in use at Lautoka for the last few years until 2005 are now lying out of use, and all chopped cane, still only a small fraction of the total, comes by road. The general extent of cane transport by road, running at over 50%, is sobering when it is remembered that transport by rail is free to the farmers while road transport is at their own cost.

Most loaded cane trucks are brought to the railway using trailers hauled by tractors. However, portable track is also still used to link the main line into the field, with oxen used for haulage.

Three mills (Lautoka, Rarawai and Penang) are situated on Viti Levu, the main island of the group, with one (Labasa) on Vanua Levu, the second island.

The largest locomotives operated by FSC are three-axle 18 ton units and there are also some smaller 12 ton units on two and three axles. Many locomotives have been transferred in the last 12 years, particularly to Labasa and Penang mills.

Diesel line cars (know as "railcars") are used by the navvies. At least 15 are still in existence at Lautoka, Rarawai and Labasa, although not all are in use. Some, and possibly most, show evidence of Wickham ancestry.

Lautoka Mill

The Lautoka cane railway is predominantly linear in character, with the main line extending south to the Sigatoka Valley, with the terminus at Kavanagasau some 133 kilometres from the mill, although there are numerous branches off the main line, some now disused. The line that once connected the Lautoka and Rarawai mill systems is now cut. This is about 12 kilometres north of Lautoka at Matawalu where a steel girder bridge over the Teidamu River has lost one of its concrete piers.

Cane is worked back to the mill from the south by stages, with major yards at Cuvu (102km from the mill), Na Savu Savu (66 km) and Navo (38km), just south of Nadi. There are a number of other major loops along the route where loads can be interchanged, allowing flexibility in operation. Cuvu is a major depot currently with four Clyde Model DHI-71 locomotives and two line cars. The depot is an enchanting time warp back to the 1950s both in terms of installations and rolling stock. Na Savu Savu depot has just one linecar and is close to the major new Momi tourist development which is under construction. Navo has a quite modern depot with two Clyde Model DHI-71 locos and a linecar. (This is the depot incorrectly identified as at Nabau in LR 167). Another two linecars are based at Natova (22km), north of Nadi.

From the Nadi area to the mill, traffic is generally handled by Clyde Model HG-3R locomotives, with assistance from a Baldwin and Hunslet.

The fleet of main line locomotives at Lautoka Mill is as follows:

No.	Type	Maker	B/n.	Date	Model	Notes
1	0-6-0DH	Clyde	57-140	1957	DHI-71	normally Cuvu; repairs at Lautoka
2	0-6-0DH	Clyde	57-146	1957	DHI-71	Cuvu
3	0-6-0DH	Clyde	57-173	1958	DHI-71	dismantled Lautoka
4	0-6-0DH	Clyde	57-174	1958	DHI-71	Cuvu
5	0-6-0DH	Clyde	58-189	1958	DHI-71	Navo
7	0-6-0DH	Clyde	58-196	1958	DHI-71	Cuvu
8	0-6-0DH	Clyde	63-290	1963	DHI-71	dismantled Lautoka
9	0-6-0DH	Clyde	64-380	1964	HG-3R	repairs Lautoka
10	0-6-0DH	Clyde	65-437	1965	HG-3R	Lautoka
11	0-6-0DH	Clyde	65-432	1965	HG-3R	Lautoka
12	0-6-0DH	Clyde	65-431	1954	HG-3R	Lautoka
13	0-6-0DH	Clyde	65-449	1965	HG-3R	Lautoka
14	0-6-0DH	Clyde	68-655	1968	HG-3R	Lautoka
16	0-6-0DH	EM Baldwin	5058.1 5.73	1973	DH18	Lautoka
17	0-6-0DH	EM Baldwin	9637.1 6.81	1981	DH18	dismantled Lautoka
18	6wDH	Hunslet	9285	1987	240hp	repairs Lautoka
20	0-6-0DH	Clyde	61-220	1961	DHI-71	Lautoka
21	0-6-0DH	Clyde	58-191	1958	DHI-71	Navo
22	0-6-0DH	Clyde	59-204	1959	DHI-71	Cuvu
	0-6-0DH	Clyde	64-385	1964	DHI-71	dismantled Lautoka ex Labasa 16

The fleet of smaller locos at Lautoka is as follows:

(9)	4wDM	Motor Rail	10115	1949	32/42hp	derelict Lautoka
(12)	4wDH	Motor Rail	122U128	1972	122U	dismantled Lautoka
13	4wDH	Simplex	122U135	1973	122U	repairs Lautoka
14	4wDH	Simplex	122U136	1973	122U	Lautoka
15	4wDH	Simplex	122U156	1975	122U	Lautoka
(16)	4wDH	Simplex	122U157	1975	122U	Lautoka
17	4wDH	Hunslet	9267	1986	140hp	repairs Lautoka

Also at Lautoka, preserved near the main gate, is Hudswell Clarke 0-4-0ST 1056 of 1914.

Rarawai Mill

Rarawai Mill is situated at the town of Ba. The rail system takes a generally radial form, with significant lines in the Ba River valley. Lines also extend up and down the coast to Tavua and beyond in the north, and south to Tavarau on the old line towards Lautoka. The Hunslets are the prized heavy haul locomotives at Rarawai.

The line to Tavua crosses the Maqere Range from Lousa to Tagi Tagi in spectacular fashion and is difficult to work. It appears that the daily delivery of trucks to Tavua has been reduced from 300 to 150 this year and the number of locomotives based at the depot there has been reduced from three to two. Now a significant amount of Tavua cane goes by road east to Penang Mill. A line car has been based at Tavua for many years, but this was withdrawn back to the mill on 6 October 2006.

The fleet of locomotives at Rarawai Mill is as follows:

2	4wDH	Steelweld	IEL6304	1962		derelict Rarawai
3	0-6-0DH	Clyde	55-62	1955	DHI-71	repairs Rarawai
4	0-6-0DH	Clyde	56-81	1956	DHI-71	dismantled Rarawai
6	0-6-0DH	Clyde	57-157	1957	DHI-71	Tavua
7	0-6-0DH	Clyde	57-175	1957	DHI-71	Rarawai
8	0-6-0DH	Clyde	62-271	1962	DHI-71	Rarawai
9	0-6-0DH	Clyde	64-378	1964	HG-3R	Rarawai
10	0-6-0DH	Clyde	64-384	1964	HG-3R	repairs Rarawai
14	4wDM	Motor Rail	10441	1955	32/42hp	derelict Rarawai
17	4wDH	EM Baldwin	5060.1 9.73	1973	DH12	Rarawai
19	4wDH	ComEng	HB2764	1963	HB	derelict Rarawai
20	6wDH	Hunslet	9087	1982	240hp	Rarawai
21	6wDH	Hunslet	9273	1987	240hp	repairs Rarawai
22	6wDH	Hunslet	9274	1987	240hp	Tavua
24	0-6-0DH	Baguley-Drewry	3773	1983	140hp	Rarawai
25	4wDH	Diema	5170	1991	DFL75/14	Rarawai
27	0-6-0DH	Clyde	56-113	1956	DHI-71	Rarawai
28	0-6-0DH	Clyde	55-56	1955	DHI-71	Rarawai

Preserved at the main gate at Rarawai is John Fowler 0-6-2TT 11458 of 1908.

Penang Mill

This mill is situated close to the town of Rakiraki and is the smallest operated by FSC. Only 12-tonne locomotives are used. The small network is radial in character. Cane trucks with fixed steel stanchions are used, unlike at the other mills, and the impression is of a more efficient rail transport system than observed elsewhere. The following locomotives are to be found at Penang:

(1)	4wDM	Motor Rail	10003	1947	32/43hp	dismantled
3	4wDH	EM Baldwin	5060.2 9.73	1973	DH12	
4	4wDM	Motor Rail	11036	1956	50hp	dismantled
(7)	4wDM	Motor Rail	14041	1959	48/63hp	ex Lautoka; derelict
8	0-6-0DM	Baguley	2727	1964	107hp	repairs
9	0-6-0DH	Baguley-Drewry	3772	1983	140hp	
10	4wDH	Diema	5172	1991	DFL75/14	ex Lautoka
18	0-6-0DH	Baguley-Drewry	3770	1983	140hp	ex Lautoka 18, 2006
1	0-6-0DM	Hudswell Clarke	D753	1950		derelict

Preserved at Penang Mill is Hudswell Clarke 0-6-0 1658 of 1935, and with it the dismantled remains of Motor Rail 4wDM 14147 of 1960.

Labasa Mill

Labasa is a delightful provincial township on Vanua Levu. The area is more remote and not so well known to tourists (even though "Survivor" is currently being filmed nearby!). As a result it has an unspoilt charm of its own. Even though there are a number of branch lines in the vicinity of Labasa, the rail system is generally of a linear character, with one major line extending to the east along the coast through very scenic country as far as Nubu, about 53 kilometres away. A rough dirt road is the only other access into this area, and it does not follow the rail line, which would make it very hard for the farmers to use road transport. Line cars are normally stationed at Waiqele and Wainikoro as well as at the mill, but a breakdown has led to the Waiqele one being removed at least for the time being.

The locos at Labasa Mill are as follows:

(1)	4wDM	Motor Rail	11288	1965	50hp	repairs
2	0-4-0DM	Baguley	2365	1950	68hp	derelict
3	0-4-0DM	Baguley	2676	1960	71hp	dismantled
4	4wDH	EM Baldwin	3229.? 4.70	1970	DHC8M Mk2A	
5	4wDH	EM Baldwin	3229.? 4.70	1970	DHC8M Mk2A	
6	4wDH	Hunslet	9284	1987	140hp	repairs
7	4wDH	Diema	5171	1991	DFL75/14	
8	0-6-0DH	Clyde	DH1.8	1954	DHI	
9	0-6-0DH	Clyde	62-270	1962	DHI-71	
10	0-6-0DH	Clyde	64-320	1964	DHI-71	
11	0-6-0DH	Clyde	64-319	1964	DHI-71	
12	0-6-0DH	EM Baldwin	5995.1 1.76	1976	DH18 Mk.3	
13	0-6-0DH	EM Baldwin	9442.1 4.81	1981	DH18	repairs
14	0-6-0DH	EM Baldwin	4413.3 9.72	1972	DH18 Mk.2	repairs
15	6wDH	Diema	5175	1991	DFL200/13d	dismantled
17	6wDH	Diema	5173	1991	DFL200/13d	dismantled; ex Rarawai 26
(18)	6wDH	Diema	5174	1991	DFL200/13d	dismantled; ex Lautoka 19
19	0-6-0DH	Clyde	58-197	1958	DHI-71	ex Lautoka 6
20	0-6-0DH	Clyde	57-149	1957	DHI-71	ex Rarawai 5
21	0-6-0DH	Baguley-Drewry	3662	1971	280hp	derelict; ex Lautoka 15
	4wDM	Motor Rail	60s375	1969	60s	derelict; ex Lautoka 11

At the start of the 2002 season, two locomotives were burned out in mysterious circumstances. These were EM Baldwin 0-6-0DH 13 and Clyde 0-6-0DH 16 (64-385 of 1964). They were sent to Lautoka Mill, where the Clyde was dismantled. The Baldwin was completely refurbished over a number of years and was then sent back to Labasa in kit form. It is currently being reassembled.

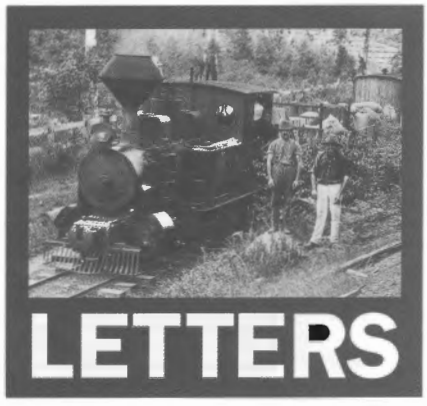
It appears that in recent years Labasa has received a number of doubtful gifts from Lautoka and Rarawai Mills in the shape of locomotives that have been transferred, in particular all three of the 1991 Diema 6wDH locomotives. These performed disastrously and are all laid aside.

Preserved John Fowler 0-6-2TT 10992 of 1907 has been moved to a position adjacent to the main road near the front of the mill. Its tender is the remains of John Fowler 4788 of 1884.

An uncertain future

Recent announcements that the Fiji Sugar Corporation (FSC) will scrap the rail system seem somewhat equivocal, with "rationalisation" rather than "elimination" being emphasised in some quarters. It is clear that many farmers in the more remote areas would not be able to transport their cane to the mills by road. Although it seems difficult to imagine how the rail system can readily recover from its present state, the real issue must be the viability of the industry as a whole. Very many problems face the Fiji sugar industry including uncertainty of land tenure, political instability, an increasing requirement to compete on the world market, low sugar content of cane harvested, a lack of new plantings, and a division of proceeds between producers and miller that is most unfavourable to appropriate investment in milling and transport facilities. As a result, it is recommended that it you are thinking of visiting the cane railways of Fiji, you should plan to do so in the near future.

Lautoka Mill's Clyde 0-6-0DH 4 crosses Yalasuna Creek before plunging into the tunnel underpass of the Queen's Road west of Sigatoka on 7 October 2006. Photo: John Browning



LETTERS

Dear Sir,

Book Review 'No. 259' (LR 191)

I have no problem with John Browning being critical of my thesis regarding the origin of the South Australian Railways internal combustion locomotive No.259. He is, of course, not the only one, and central to the book's publication was the hope that it might "provoke further research".

However, it was never intended to be any kind of "research into the history of early internal combustion locomotives" and it is a little unfair to judge it in those terms. Rather, the book is an attempt to answer questions about the provenance of No.259 that (at least to me) seem never to have been addressed convincingly.

It is in that connection that the Broome/Wyndham machine appeared to be significant. The offer by Hawthorn-Leslie to build the 1000 HP "thermo electric" locomotive (made after Henry Deane's retirement) is dealt with in some detail.

John Browning also draws attention to the delivery of a 40 HP locomotive by Ruhrthaler in June 1912, thus questioning the statement in the article by Jens Merte (upon which I relied) which said "The firm had only six years experience with the construction of locomotives, and those constructed hitherto had not exceeded 20 HP". I have discussed this with the author, and he has pointed out that in the translation done for me, the word "those" was used to represent the phrase "standard locomotives", in order to avoid an infelicitous repetition. The translator presumably not recognising the significance of the word "standard".

The firm had previously built three locomotives larger than 20HP. A 30 HP one in September 1910, a 35 HP one in December 1912, and John Browning's 35/40 HP engine delivered on 17 June 1912 for Radschad (India). These appear to have been developments of the "standard locomotives", but Jens Merte points out that none of these could have been a precursor for No.259, which was a totally new design.

However, because the 35/40 HP machine was apparently the first built with three axles and ordered through Ironside, he suggests "that somebody from Ironside visited Ruhrthaler to see the...loco running before it was sent to India and then decided to order (on behalf of a client) the 100 HP loco to see if Ruhrthaler could build 'big' locos". From that point on, the story remains the same.

One may also mention that the term "Australian Government" is quite precise. Advertising for the recent sale of Telstra shares was noted as being "authorised by the Australian Government".

Recently, one small additional piece of information has been provided, by a retired South Australian Railways engineer. He has in his possession a reference to two dockets which were attached to the Ruhrthaler machine, and a note that an engine test was

Where is it?

This old print was given to Dr JC Radford of the St Kilda Tramway Museum by the National Trust of South Australia. Identified only by the stamp "AIRVIEWS LIMITED" on the rear of its card mount, it appears to show a fruit growing area, possibly in South Australia or north-western Victoria. A short tramway extends from the shed at the bottom left out into a large yard, and features a turntable with tracks leading to two smaller sheds. Does anyone have any ideas as to the purpose of this tramway and/or where it may have been located?

carried out on 22 November 1913. Henry Deane retired on 12 February 1914. If he had been required to give the usual three months' notice, this would have become public about a week before the test. After this, the machine was placed in the loco shed and apparently not used until shunting trials were carried out in June 1914.

My source has also informed me that the two dockets (CME1800/11 and CME3496/11), along with all similar SAR files from 1880 to 1975, were destroyed in the early 1990s. Not an act of great enlightenment.

Ralph Holden
Cheltenham, SA

Dear Sir,

Coleman & Sons Miniature Railway (LR 187)

Further to the report and photograph of the miniature railway at Bronte Beach, I have unearthed two photographs of the train when it was operating on the rooftop of Benjamin's department store at Chatswood over Christmas in 1962. Benjamin's was located on the west side of Chatswood railway station in Victoria Avenue. It later became the 'Big W' store before it was demolished. Two office towers now occupy the site.

Following the recent report in *Light Railways*, I visited Bronte Beach and spoke to Peter Coleman, the operator there. I was able to provide him with copies of the 1962 photographs of the train. He advised that his father, now in his eighties, was setting up a train for the Melbourne Show, with two locomotives down there for those operations. Perhaps some of your Victorian correspondents can add additional information on this. Peter also mentioned that they have a train at Rosehill Racecourse that operates on race days.

Peter Gambling
Chatswood, NSW

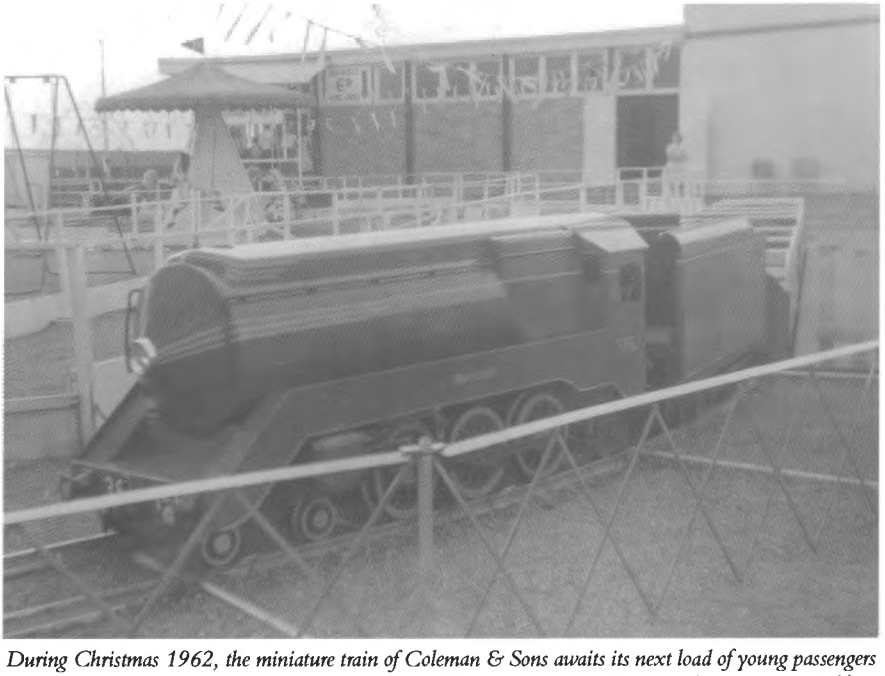
Dear Sir,

Caldwell Engineering locomotives (LR 95, 99, 102, 104, 110, 118, 119, 166 & 176)

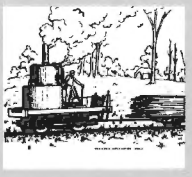
It is unfortunate that the Seaworld locomotive illustrated on p.24 of LR 187 was identified as having been built by Caldwell Vale. It was correctly noted as carrying a Caldwell Engineering plate by David Mewes as long ago as in LR 104. Paul Simpson provided further details of Caldwell Engineering, and Felix Caldwell, the man behind both companies, in LR 110. They were quite distinct operations and separated in time by a considerable period.

John Browning
Rockhampton, Qld

The Caldwell Engineering locomotive derelict on Byrnes farm, near Chinderah NSW, in November 1974. Acquired from the Titanium Alloy Manufacturing Company at nearby Kingscliff in 1960, it worked a tramline on the farm until 1968. It then lay out of use until purchased by Sea World in 1975. Photo: David Mewes



During Christmas 1962, the miniature train of Coleman & Sons awaits its next load of young passengers on the rooftop of Benjamin's department store at Chatswood, NSW. Photo: Peter Gambling



LRRSA NEWS

MEETINGS

ADELAIDE: "Christmas Film Show"
The 2006 Christmas Meeting will be a Film Evening at the Oaks Theatre. Please bring a plate of supper.
Location: Contact Arnold Lockyer on (08) 8296 9488 for details.
Date: Thursday 7 December at 7.30pm.

BRISBANE: "Annual Photo Competition"
Judging, by popular vote, of the annual photographic competition, with the Mike Loveday Memorial Trophy awarded to the winner. The guest speaker will be David Mewes, with a presentation on his recent trip to England.
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 8 December at 7.30 pm. Entry from 7 pm.

MELBOURNE: "Video Night"
We will have a video night including the West Coast Wilderness Railway, Hawaiian Railways, narrow gauge in the Iberian Peninsula, and other gems.
Location: Ashburton Uniting Church Hall, Ashburn Grove, Ashburton.
Date: Thursday, 14 December at 8.00 pm

SYDNEY:
The NSW Division's next meeting will take place in February 2007. See the February issue of *Light Railways* for details, or contact Jeff Moonie, on (02) 4753 6302.

LRRSA ONLINE DISCUSSION GROUP

Have you joined the LRRSA's email discussion group yet ? See:
http://au.groups.yahoo.com/group/LRRSA/
and click on "Join This Group"!
Already the 96 members have had wide ranging discussions on items such as: Newcastle's *Coffee Pot*, Fowler jackshaft locos, aerial ropeways, Samoan tramways, Koondrook tramway, Otford mushroom farm, Fijian tramways.

RESEARCH

175th Anniversary of AA Coy Tramway

The Newcastle Industrial Heritage Association plans to celebrate the 175th Anniversary of the opening of the Australian Agricultural Company's tramway from its 'A Pit' to the Newcastle wharves in December 2006. The official opening of the tramway occurred on 10 December 1831, when two wagons, each loaded with one ton of coal, descended the incline track from the pit adit with flags flying to the cheers of company employees, drawing two empty wagons back to the mine tunnel. The coal was loaded on the vessel *Sophia Jane*, Australia's first packet steamer. Details of the event will be posted on the NIHA website at: www.niha.hl.com.au/index.php

Bob Cook and Rod Caldwell

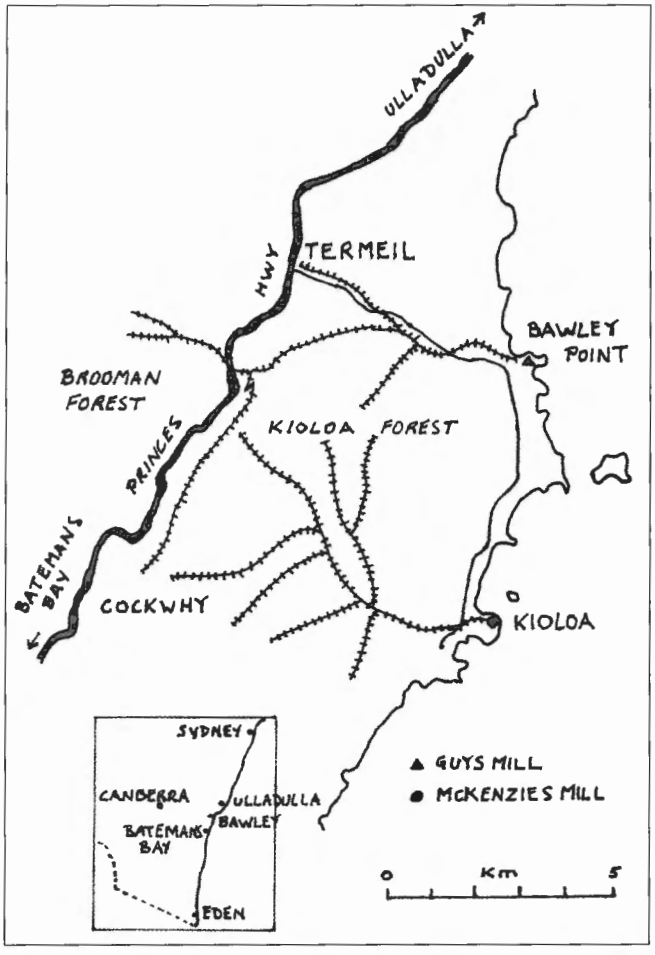
New book on WA timber lines

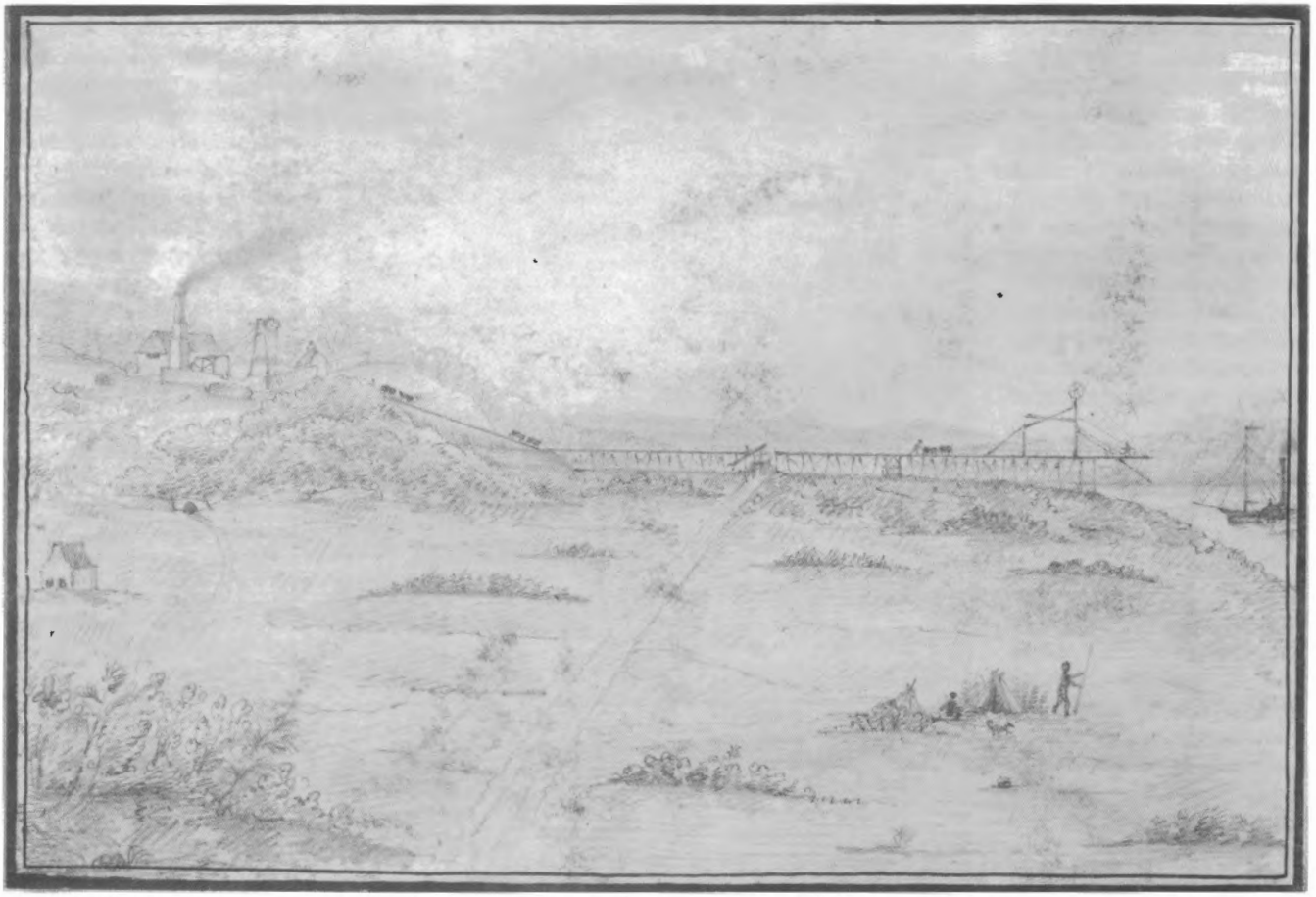
A new book on the WA Government's Banksiadale Mill, north of Dwellingup, is of railway interest. Shirlie Makin's *My memories of Banksiadale aka Banksiadale: memories of a mill town* (self-published, 2006) contains many photos of the mill and railway operations, although only a few of actual trains on the main and bush lines. Several pages of text are devoted to memories of the railways.

David Whiteford

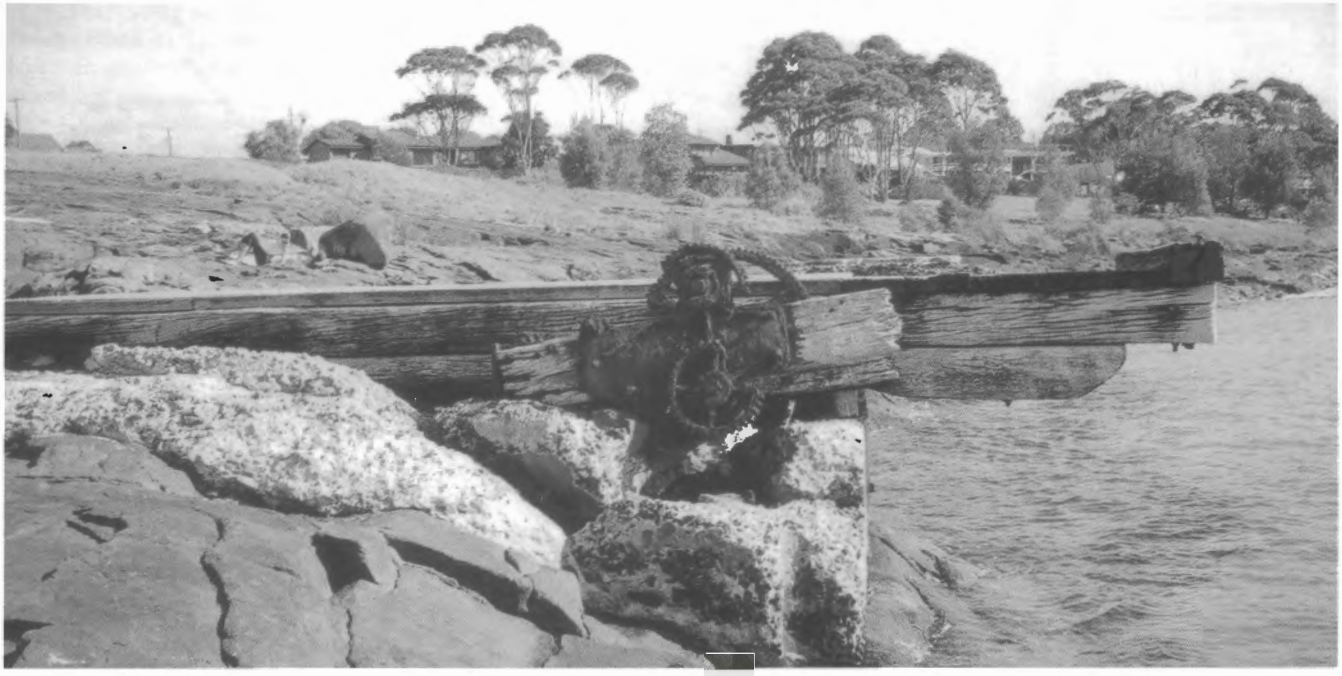
Bawley Point-Termeil Logging Tramway, NSW

Ian Barnes, Len Mors and Ian Bevage (ex- NSW Forestry Commission officers) undertook a field exploration of the remnants of the old Termeil-Bawley Point horse-drawn logging tramway located between Batemans Bay and Ulladulla on 4 April 2005, with Ian Bevage making a follow-up visit on 3 September 2006.





The circa 1833 pencil sketch by J White, which shows details of the AA Company railway and mine. Two sets of twin skips are operating on the incline plane funicular section of the railway from the mine to the bottom of the ill. On the trestle bridge, a convict labourer (presumably) pushes a loaded skip to the staithe. Descriptions attached to other sketches in the series named the waiting ship as the Sophia Jane. *Courtesy Mitchell Library, State Library of New South Wales*



The Bawley Point wharf and winch that drove the endless rope used to move sawn mixed hardwood timber from the mill offshore to anchored steamers of the Illawarra Steam Navigation Company (the old Pig and Whistle Line) for shipping to Sydney. *Photo: Ian Bevage*

Sawmilling in the Murramarang area of the south coast between Ulladulla and Batemans Bay during the 1880-1926 period drew logs from the Kioloa and Brooman forests that straddle the now Princes Highway (see map). The sawmill at Bawley Point was built by Francis Guy in 1891 (it burnt down in 1894 and was re-built). It was sold to and operated by Alfred and Edwin Ellis from about 1912 until it burnt down finally in 1922.[1] Francis Guy went on to operate other mills and tramways in the Batemans Bay area and his activities there have been well described by Jim Longworth.[2] A second mill was established at Kioloa by Goodlet and Smith, Sydney hardware merchants, in about 1884 and operated until 1893 when it closed following a boiler explosion. Hepburn McKenzie re-established this mill in 1912 at the south end of Kioloa beach; it burnt down in 1916, was rebuilt and closed in 1926 following another fire.

These two sawmills were serviced by horse-drawn logging tramways, both of which were in operation by 1893. Although these tramways came close together near the now Princes Highway, they were evidently not linked up because of the topography. The Bawley tramway had a zigzag to overcome steep grades close to where the 18 Mile track now crosses the line south of Termeil. The gauge was 48 inches, with rails of turpentine or ironbark 4 inch squares, 9 feet long, spiked to 12 feet half round split timber sleepers at 15 inch centres set directly in the ground. Horses worked in teams of eight in single file, hauling logs on steel-wheeled trolleys, one log per bogie set to distribute the weight.[3]

All that remains of the tramway is the formation, now overgrown, but its line can be clearly discerned. Large spotted gums, the result of natural regeneration post 1920s when the line was closed, now grow on the formation.

At Bawley Point township the tramway has been obliterated by urban development, but at the Guy's mill site on the granite rock ledge beside the sea, the access to the mill site follows the route of the tramway into the mill yard. Little remains of the mill infrastructure apart from the brick and concrete foundations of the mill itself, the wharf (a popular fishing spot) and a number of iron ring bolts and stays set in the rock. In the mill yard, timber was moved around on trolleys on light steel rails. There is no evidence of these today on site, but Michael Tracey recovered remains when diving off the Point adjacent to the mill from where they had been dumped in the sea. *Ian Bevage*

Coming Events

DECEMBER 2006

4 Wee Georgie Wood Railway, Tullah, TAS: narrow gauge steam train operates 10am-4pm. Phone: (03) 6230 8233.

10 Newcastle Industrial Heritage Association, NSW: 175th Anniversary of the AA Company Tramway. The NIHA will be holding special activities to commemorate this important event (see page 25). Please check the NIHA website at www.niha.hl.com.au/index.php

10 Alexandra Timber Tramway & Museum, VIC. Steam-hauled narrow gauge steam trains (1000-1545) and museum displays. Information: Bryan 0407 509 380 or Peter 0425 821 234.

16-31 Semaphore to Fort Granville Steam Railway, SA. Miniature steam trains operate daily during school holidays, unless temperature in Adelaide is 35 degrees or above. Phone: NRM (08) 8341 1690.

17-31 Australian Sugar Cane Railway, Bundaberg, QLD: Steam-hauled trains will operate every Sunday and Wednesday during this period and on Tuesday 26 December, with diesel-hauled trains each Tuesday and Friday. Phone: (07) 4153 6609 (operating hours or leave message).

JANUARY 2007

1-28 Australian Sugar Cane Railway, Bundaberg, QLD: Steam-hauled trains will operate every Sunday and Wednesday during this period and on Monday 1 and Friday 28 January, with diesel-hauled trains each Tuesday and Friday. Phone: (07) 4153 6609 (operating hours or leave message).

1-31 Semaphore to Fort Granville Steam Railway, SA. Miniature steam trains operate daily during school holidays, unless temperature in Adelaide is 35 degrees or above. Phone: NRM (08) 8341 1690.

13-14 Wee Georgie Wood Railway, Tullah, TAS: narrow gauge steam train operates 10am-4pm. Also on 21 and 28 January. Phone: (03) 6230 8233.

FEBRUARY 2007

4 Wee Georgie Wood Railway, Tullah, TAS: narrow gauge steam train operates 10am-4pm. Also on Sunday 35 February. Phone: (03) 6230 8233.

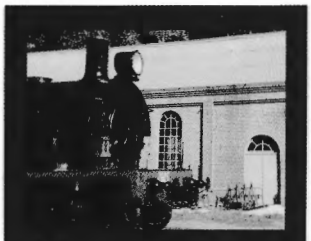
Advance Notice

The 8th Australian Narrow Gauge Convention, with Modelling the Australian Scene as its theme, will be held on 6-9 April 2007 in Melbourne. Full details can be found on:
http://www.users.bigpond.com/nawlins/ngconvoz.htm or by writing to Laurie Green, PO Box 435, SUNBURY 3429. Phone (03) 9744 5188.

Note: Please send information on coming events to Bob McKillop – rfmckillop@bigpond.com - or the Editor, Light Railways, PO Box 674, St Ives NSW 2070. The deadline for the February 2007 issue is 29 December 2006.

References

1. Hamon, B.V. (1994). *They Came to Murramarang; A History of Murramarang, Kioloa and Bawley Point.* Centre for Resource and Environmental Studies, Australian National University 137 p.
2. Longworth, Jim (2000). 'An Introduction to the Tramways of the New South Wales Far South Coast - Part 2'. *Light Railways* 151, 5-12.
3. Hamon, B.V. (1994), as above; Tracey, Michael (1997). *Archaeological evidence for a horse-drawn tramway at Bawley Point, NSW.* in John Dargavel (ed.) Australia's Everchanging Forests II, 188-209. *Proceedings Third National Conference on Australia Forest History.* Centre for Resource and Environmental Studies, Australian National University.
4. Tracey, Michael (1997), as above.



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

AUSTRALIAN SUGAR CANE RAILWAY, Bundaberg
610mm gauge
Bundaberg Steam Tramway Preservation Society
On 21 October, a ceremony was held to inaugurate a short track extension at the North Bundaberg Botanical Gardens. A link line had been constructed on a new formation outside the depot to form a triangle, allowing stock to be turned for the first time. This work is the precursor of a major further extension, providing an extended loop of 1km, doubling the current line's length and allowing the public to view previously little accessed parts of the gardens. A novel feature of the plan is that trains will run through the depot building, allowing visitors to see the Society's restoration and maintenance work at close hand.
The 'golden spike' to complete the new link was driven by Mr Grant McLean, Chief Executive of Bundaberg Sugar Ltd. Bundaberg Foundry 0-4-2T 3 (3 of 1952) hauled the inaugural train carrying invited guests. Also in steam was Orenstein & Koppel 0-4-0T *GERMANY* (6805 of 1914), while EM Baldwin 0-4-0DH *VALDORA* (6/1258.1 6.65 of 1965) put in a brief appearance.
FC Hibberd 'Planet' 4wDM 3919 of 1959 is in service for navvy duties. It is looked after by the man who was in charge of it when it first arrived at Gin Gin Mill 47 years ago. Under restoration is John Fowler 0-6-2T *INVICTA* 11277 of 1907. The boiler has been reunited with the chassis and new side tanks are on hand. This locomotive is expected to enter service in 2007. Awaiting restoration is Bundaberg Foundry 0-6-2T 1 (1 of 1952), which needs a new firebox. The Society has very successfully assembled a dedicated workforce which includes past and present sugar industry employees. Many of the group are retirees who have significant skills and time to devote to the project. The ASCR will operate with steam power every Sunday and Wednesday from 17 December to 28 January, plus Tuesday 26 December, Monday 1 January and Friday 26 January. In addition, diesel locomotives operate trains all remaining Tuesdays and Fridays in the same period.
John Browning, 10/06

BRENNAN & GERAGHTY'S STORE, Maryborough
610mm gauge
National Trust of Queensland
Brennan & Geraghty's store, reputed to be the oldest 'time warp' retail business is Australia, has its own internal tramway, which runs some 40 metres down the length of the building (LR 156, p.28). A visitor in September 2006 noted the tramway with a small human-powered trolley still on its hardwood rails. The tramway was used to carry goods from the store into and within the shop area. Among the interesting items in the shop, now operated by the National Trust as a museum, were 100 year old curry containers and toilet paper from the 1950s. Readers visiting Maryborough are encouraged to check out this fascinating attraction and its unique tramway.
Peter Jones, 9/06

MINER'S MEMORIAL, Warra
The Queensland Government operated an underground mine at Warra, on the Darling Downs, between 1914 and 1919. A memorial of the mine has been created at the side of the Warrego Highway, featuring a restored narrow gauge mine skip.
John Browning, 10/06

Raymond Mewes, Algester, Q
610mm gauge
On 31 October Raymond took delivery of two 2ft gauge locomotives from the collection formerly with Graham Chapman at 'Steamworks', Murrumba Downs. They had come there from Plane Creek Mill at Sarina. These are 4wDM Ruston & Hornsby 371381 of 1954 and FC Hibberd 'Planet' 4wDM 2333 of 1940. They have been placed in private storage.
David Mewes 10/06

Graham Chapman, Steamworks, Murrumba Downs
610mm gauge
Graham Chapman has now moved the bulk of his collection to Narangba. A clearance auction was held at the old site on 1 November. Included in the sale catalogue were the following two locomotives:
MAROOCHY 0-4-2T Hudswell Clarke 1078/1914 ex Moreton Mill
1 0-4-2 Fowler 17683/1927 ex Racecourse Mill
Frank Stamford 10/06; David Mewes 10/06

New South Wales

FURNACE, FIRE & FORGE HERITAGE TRAIL, Lithgow
The *Furnace, Fire & Forge Heritage Trail* (LR 180, p.27) was formally inaugurated on 15 September by Ian Castles, mayor of Lithgow, at the launch of the LRRSA's new book of the same name. About 100 guests and visitors attended the ceremony at the restored Union Theatre, the scene of a number of historical events featured in the book. John Della Bosca, the NSW Minister for Industrial Relations, formally launched the LRRSA book in an entertaining and passionate speech that demonstrated his enthusiasm for the book's subject and the quality of its production. John has close family connections with Lithgow and he drew on his first-hand experiences in the speech. The State Mine Museum prepared a display of historical artefacts associated with the iron and steelworks for the event.
The Furnace, Fire & Forge Heritage Trail interprets and promotes 20 sites associated with Lithgow's rich industrial heritage, including the Zig Zag Railway, Blast Furnace Park, Eskbank House, Lithgow State Mine Heritage Park & Railway and the Small Arms Museum. Following the launch, FF&F contributor Ian Rufus provided a guided tour of Blast Furnace Park for interested visitors, including John Della Bosca and LRRSA stalwarts Bill Hanks, Colin Harvey, Jeff Moonie, Bruce Macdonald. Ross Mainwaring and Bob McKillop.
Editor, 9/06

ILLAWARRA TRAIN PARK, Albion Park 610mm gauge
Illawarra Light Railway Museum Society
A number of 2ft gauge items have been obtained from the Lilyvale Mushrooms site at Helensburgh. This includes the remains of a diesel locomotive, a small steel hopper, a braked flat car and four mushroom racks that were used with the flat car. A quantity of 20lb/yard and approx 15lb/yard track panels was recovered from the site as well as a set of left-hand points. The quality of the rail varies from very good to badly rusted. The good 20lb/yard material will be used for track work extensions in and around the new display shed.
John Garaty, 10/06

Victoria

PUFFING BILLY RAILWAY
762 mm gauge
Emerald Tourist Railway Board
As a fund-raising event, the Climax Locomotive Restoration Committee of the PBPS organised a 120th Birthday celebration for locomotive No.861 *J.C. REES*, formerly known as *JOHN BENN*, on 17 September 2006. The locomotive was built in Belgium by Société Anonyme Usines Métallurgiques du Hainaut - Locomotives Couillet (normally abbreviated to Couillet) as a 0-4-0T in 1886. It has the Couillet builder's number 861 and was built for Decauville & Cie. of Paris, suppliers of portable and industrial railway equipment (their serial number 43 of 1886). The locomotive was supplied new by Decauville to the Metropolitan Gas Company Ltd, Melbourne, for use at their gasworks in West Melbourne. Another locomotive of the same type was supplied in 1889 (Couillet builder's number 986, Decauville serial number 90). It was named *CARBON* (see LR 160, p.3)
Both locomotives were put out of service in 1933 but survived and went into private ownership around 1961. In the 1970s, No.861 was rebuilt in the style of an American 2-4-2ST

of the 1880s for a proposed tourist railway, but is still mechanically a Couillet locomotive. *CARBON* has survived in its original condition. Both are now owned by Colin Rees and are leased to the Emerald Tourist Railway Board.

The special light-weight train consisted of three canopied NQR passenger trucks and NQR truck No.21, which has seats but no roof. The train ran from Emerald, departing five minutes later than the scheduled 10.00am bound for Gembrook, with a photo stop at the big Wright trestle bridge. Locomotive 861 was assisted by *CARBON*, both locomotives sporting Australian and Belgian flags. Arrival at Gembrook was scheduled for 11.40am, but was actually somewhat earlier after a spirited run up the long 1 in 30 grade from Cockatoo Creek. While these small locomotives were not built for steep grades, their performance was excellent, and they are both in first-class mechanical condition, despite their great age. The train attracted much attention from the locals between Cockatoo and Gembrook – it seemed that most residents came out to wave to the train!

At Gembrook the seventy passengers were provided with an excellent lunch, before departing on a short trip to Orchard Road level crossing and back, with a locomotive on each end of the train. There was then a "triple-parallel run" along numbers 1, 2, and 3 roads at Gembrook heritage station, with 861, *CARBON*, and 6A off the regular train. This was achieved with much whistling from the three locos, which have very distinctive whistles: *CARBON* a deep-toned mellow whistle, while 861 has a VR chime whistle and a brass bell. The spectacle was repeated before 6A took the regular train back to Belgrave.

There was then a cutting of the special birthday cake ceremony. It was a layer cake made out of timber, decorated with coal. Col Rees gave a short and entertaining speech about the locomotives, cut the cake in half with a saw, and the two drivers took a half each to feed into fireboxes of the two locomotives. This was followed by a second cutting of the cake ceremony, this one being for the passengers!

At 3.15 the train departed for Emerald, with another photo stop at the big Wright bridge, and a thirty-minute stop at Lakeside, waiting for the last regular Belgrave train, hauled by 14A, to depart and clear the section. Arrival at Emerald was on time at 5.05pm, with most participants judging it a very enjoyable day.

NA 2-6-2T locomotive 8A had its inaugural re-baptism on a special mixed to Gembrook on Sunday 15 October 2006. Except for short stints at Colac and Moe, the locomotive spent most of its working life on the Gembrook line. Whilst at Colac it was used on a construction train for the Beech Forest to Crowes extension, which opened in 1911. In 1955 8A ceased operating on the Gembrook line and was relocated as a static exhibit at Pasadena Park in Beaumaris. It remained there until 1970, when it was then moved back to Belgrave and, in the seventies, underwent its first major reconstruction. 8A was well-known VR and Puffing Billy engine driver Ian Barkla's favourite loco on the Gembrook line. The loco still has a modified front end (Illinois Central blast system) fitted during an overhaul at Newport Workshops in May 1923.

Frank Stamford, 10/06; Peter Ralph, 10/06

STRINGYBARK EXPRESS MUSEUM & HERITAGE PARK
1600mm gauge

GreenTrail Associates Group Inc.

Further to the report in LR 187 (p.28), a State grant funding the Wahgunyah section of the Murray to Mountains Rail Trail was announced at Rutherglen by the Victorian Treasurer, John Brumby, on 21 October 2006. Under the grant, $490,000 will be applied to developing the trail from Rutherglen to Wahgunyah, with further funding to $800,000 in all allocated towards its completion.

Existing portions of the trail network run from Wangaratta to Beechworth and Bright along former railway formations, but the new section will run parallel with the existing track of the Springhurst -Wahgunyah line. The parallel placement is unique for existing trails, although some three others have been announced in which the rights-of-way will be shared and which involve tourist railways. A feasibility study for the Stringybark Express tourist railway, 'Change Here!', has examined the integrated trail and rail proposals together with options for light rail (LRV) operations for both commuter and tourist patronage. A consequence of the grant is that the proposal to convert the line at the Wahgunyah end to 610mm gauge, as reported in LR 187, is no longer being pursued.

The GreenTrail Associates Group has been running a replica Victorian Railway's postal motor and trailer, 'Lil Red', which carries ten passengers, but is looking to significantly upgrade their capacity to carry larger loadings. Its focus is on the PPM 50 light railcar developed by Parry Associates in Great Britain. This utilises a revolutionary fly wheel technology designed specifically for light weight street tramways and interurban lines and is ideally suited to branch line operation.

David Moyle, 10/06

Tasmania.

WEE GEORGIE WOOD STEAM RAILWAY, Tullah 610mm gauge

The 0-4-0WT *WEE GEORGIE WOOD* (J Fowler 16203 of 1924) is back in operation for the 2006-2007 season after having some reasonably major boiler repairs. These involved replacing the crown sheet and stays, which has been done through the winter break since the end of last season. The repairs have been successful and the loco is performing faultlessly once again. Rob and Joyce Bushby rode on the train on Sunday 1st October. It was an overcast day and there were few people about until just before 4pm, when a couple of car loads arrived just as thoughts were being given to shutting up for the day. In general terms, the track and the infrastructure are in good condition which should allow for a trouble free season ahead. This 'little railway' is well worth a visit: it is very people friendly and really looks after it's customers.

Rob Bushby, 10/06

Western Australia

HERITAGE REGISTER LISTINGS

The Heritage Council of WA recently invited submissions as to whether the former Stathams Quarry (on the Upper Darling Range Railway Zig-Zag) and the Derby Tramway woolshed should be placed on the register of heritage places on a permanent basis. Submissions closed 22 September and 30 August respectively.

Two sites of light railway interest were entered on the WA Register of Heritage Places from 22 August. The Point Cloates Light Station and the Norwegian Bay Whaling Station ruins north of Point Cloates both had light non-locomotive worked lines. The whaling station was first built in 1912 and, through various rebuildings, finally had an extensive tramway with many wagon turntables. The station closed in 1957 but extensive remains are of considerable interest. The lighthouse had a tramway to assist in construction, hauling sandstone to the summit of Cloates Hill during construction after the 1907 approval. The light house and ruins of quarters exist at the site.

David Whiteford, 10/06

KEITH WATSON, Canning Vale
610mm gauge

The delightful little Porter-style 0-4-0ST *PHEONIX*, built in 2001 by Keith Watson and Keith Tingle, has been sold to an English buyer. It arrived at Leander Architectural, Dove Holes, Derbyshire around the start of September. When all formalities are completed it is expected that it will run at the Derbyshire Dales Narrow Gauge Railway at Rowsley South.

Bob Darvill, 9/06

LOOPLINE TOURIST RAILWAY, Kalgoorlie 1067mm gauge

As reported in LR 173 (p.31) and 176 (p.31), this tourist railway has been closed since January 2004 to allow part of the track to be lifted to accommodate an expansion of the Kalgoorlie Super Pit. Funds had been provided by industry for rebuilding the track on a new alignment between Boulder and Kalgoorlie with a terminus at Mount Gleddon, Kalgoorlie. A further extension is planned from this terminus to Hannan Street in Kalgoorlie, the original terminus of the line.

Further changes to the route will now be made as part of the selected alignment was found to be too steep. The Loopline society's president, Michelle Pownall, told the media on 13 October that the southern section of the embankment near the edge of the Super Pit, known as the noise bund, was too steep for a steam train to climb.

Members of the Bundaberg Steam Tramway Preservation Society pose with Bundaberg Foundry 0-4-2T 3 (3 of 1952) and Orenstein & Koppel 0-4-0T GERMANY *(6805 of 1914) on the Australian Sugar Cane Railway's new track extension at North Bundaberg Botanical Gardens. Photo: John Browning*

The internal wooden-railway tramway in the heritage-listed Brennan & Geraghty's store in Maryborough, Queensland as photographed by Peter Jones in September 2006.

The official guests at the FF&F book and Heritage Trail launch at Lithgow on 15 September 2006 pose with a bust of the steelmaking pioneer William Stamford. From left, Ian Castles (mayor of Lithgow), John Della Bosca (Minister for Industrial Relations), Bob McKillop (author) and Gerard Martin (Member for Bathurst). Photo: Jannine McKillop

Michelle stated that a new route had been defined that will allow the railway to be operational sooner. ABC Online, 13 October 2006 , via Barry Blair

OVERSEAS

CORAL COAST RAILWAY CO, Cuvu, Viti Levu, Fiji

610mm gauge

The Coral Coast Railway depot and station is situated on the Fiji Sugar Corporation railway adjacent to the entrance to the resort on Yanuca Island. It is understood that heavy maintenance jobs are carried out at the FSC Cuvu depot.

Hudswell Clarke 0-6-0 11 (972 of 1912), powered by a diesel engine in its tender, and Motor Rail 'Simplex' 4wDH 24 *THE PUFFING BOTO* (14024 of 1957) are the current locomotives in use. Two further Motor Rail 4wDM locomotives have arrived this year from Penang Mill, 7 (14046 of 1959) and 8 (23014 of 1959), both currently out of use. The latter was formerly at Lautoka Mill and has had its engine and transmission removed.

The tourist attraction carries out a busy program of operations. A train, normally powered by the Hudswell Clarke, is scheduled to run daily to Natadola Beach while another runs on selected days to Sigatoka. There is a variety of other tours available. It was stated that a train had once been run right through to Tavua in the northern part of the Rarawai system. Although this is not now possible because of a bridge failure, the offer of an extended rail tour from one end of the Lautoka system to the other, with overnight stays in luxury hotels, is an enticing prospect worthy of consideration by a tour promoter.

The JW Marriott Fiji Resort & Spa, a new major tourist development, is under construction at Momi, close to Fiji Sugar Corporation's Na Savu Savu depot between Cuvu and Nadi. The resort will open in 2007 and it is intended to have another tourist train to serve it. Motor Rail 8 will be receiving a new engine and transmission in the very near future in preparation for this service.

John Browning 10/06

FIJI, Industrial Locos on static display

The following changes to ex-CSR/Fiji Sugar Corporation locomotives previously reported in LR were noted during a visit to Fiji in October 2006:

Labasa, Vanua Levu: John Fowler 0-6-0T 7879 of 1896 has disappeared from its resting place near the police barracks. It was observed here in 1994, at which time it was already in an unsafe condition.

Lautoka Town Council, Viti Levu: A visit to the Council Depot revealed no sign of Hudswell Clarke 4-4-0 18 (1118 of 1915), the famous 'free train' passenger locomotive. Its derelict remains had been observed here in 1994 and whether it has been removed, become totally overgrown, scrapped or buried could not be ascertained. Local enquiries only led to a very sad steam roller in the grounds of the town library.

Ba Town Council Park, Viti Levu: Noted in a park close the river bank just downstream of the mill were the remains of two locomotives. John Fowler 0-6-2T 10 (11393 of 1907) was seen dumped semi-dismantled at the mill in 1994. It has since received some cleaning up and a coat of paint but is still without one side tank and its cab. Steelweld 4wDH 18 (IEL 6305 of 1962), built to a Plymouth design, is somewhat more complete, although it has only one wheelset, but is in a fast-deteriorating condition.

Raffles Gateway Hotel, Nadi, Viti Levu: John Fowler 0-6-0TT 7 (10656 of 1906) is in very good condition, well cared for, regularly repainted, and treated as an object of pride by the hotel's maintenance staff, a welcome contrast to the general state or fate of "preserved" locomotives in Fiji.

John Browning 10/06

PENRHYN CASTLE INDUSTRIAL RAILWAY MUSEUM, United Kingdom

Your editor and his wife Kerry stayed at Abbeyfield Hotel in the delightful village of Tal-y-Bont, some two miles east of Bangor in North Wales in October. We discovered that we were within easy walking distance of Penrhyn Castle, itself a National Trust attraction of great interest, but also home to what is claimed to be "the only museum in Britain dedicated to industrial railway locomotives and rolling stock". The validity of that claim may depend on how one interprets the semantics, but the museum, housed in the old stables of the castle, boasts an impressive collection of items from the narrow gauge lines that served the local slate mining industry, as well as other industrial locomotives from around the country.

The first part of the collection is based on the 2ft gauge Penrhyn Railway, which served the extensive slate quarries at Bethesda owned by the Penrhyn family. The 0-4-0ST *CHARLES* (Hunslet 283/1882) is on display heading the Penrhyn family saloon carriage and an open quarry workman's carriage. A typical four-wheel wagon demonstrates the method of loading slate, while in the courtyard there is a display of the various types of trackwork used on the Penrhyn Railway, over which a restored Ruston & Hornsby 20DL 4wDM loco *ACON* and several items of rolling stock operate.

The Dinorwie Collection features items from the 4ft gauge Padarn Railway, which transported slate from quarries beside the twin lakes at Llaberis to Port Dinowise. Its centrepiece is *FIRE QUEEN*, a remarkable and historic 2-2-0 tender locomotive built by A Horlock & Co in 1848. It worked until the 1880s and was then placed in storage for 80 years before being moved to Penrhyn Castle in 1969. The collection includes the 'Officials Saloon Carriage' and a 'Velocipede', an unusual man-propelled vehicle initially used for transporting quarrymen and later for track inspection.

Other industrial items came from iron and steelworks, gasworks, collieries and granite quarries around the country. Locomotives of interest include *WATKIN*, a 3ft gauge vertical boiler 0-4-0WT built by De Winter & Co of Caernarfon for the Penmaenmawr & Welsh Gravel Company; North Thames Gas Board No.1, a standard gauge 0-4-0WT (Neilson 1561/1870); *HAYDOCK*, a standard gauge 0-6-0T

In the main street of Koondrook, Victoria, a representative train of the former Koondrook Tramway has been assembled on a length of track, including a replica of the tramway's Sentinel 4WTG locomotive (7566 of 1928). Photo: Alf Aitken

The placement of former BHP Iron Knob electric locomotive E1 (Metropolitan Vickers 1928) on display at the National Railway Museum was reported in LR 160 (p.30). Ray Graf photographed the locomotive at the museum amid other 1067mm gauge locomotives and rolling stock on 9 January 2006.

(Robt Stevenson 2309/1879) that worked at Richard Evans & Company's Haydock Foundry in Lancashire; and *KETTERING FURNACES NO.3*, a 3ft gauge 0-4-0ST (Black Hawthorn 859/1885).

Editor, 10/06

WELSH HIGHLAND RAILWAY, United Kingdom 597mm gauge

A visit to this railway in October found ex-South African Railways NG/G16 class 2-6-2+2-6-2 No.138 (BP 7863 of 1958), the last Garratt to be built by Beyer Peacock, as the operating locomotive. The world's first Garratt, ex-Tasmanian Railways 0-4-0+0-4-0 K1(Beyer Peacock 5292 of 1909), was in the workshops undergoing conversion from oil to coal firing and receiving attention for faults that became evident during its operation over the Super Power weekend (LR 191, p.31). These include a leak from the water tank, which was found to be the cause of an axle box running warm, improvements to the sanders and possible replacement of the injectors.

The terrorist-related chaos at Britain's airports during the second half of 2006 has caused locals to holiday at home to the benefit of the Welsh Highland Railway, which has seen a significant increase in patronage during 2006. The railway is experiencing a locomotive shortage to cope with this traffic and the availability of K1 for regular service by Easter 2007 is eagerly awaited, particularly following the failure of NG/G16 No.143 in early October.

Your editor and Kerry experienced the luxury of the first class carriage with individual lounge chairs and personal tables. Our steward was Daron Lodge, a New Zealander who had come to Wales on his retirement to work on the WHR – but returns to New Zealand each winter! It was a dull grey day, but there were clear views to the summit of Snowdon at Rhyd Ddu.

Construction of the extension from the present terminus at Rhyd Ddu to Porthmadog is making rapid progress. Rails for the project are stored in the yard at Dinas and we noted the two men in charge of that task in serious discussion there, no doubt addressing operations tasks – or was it the weekend football results? Rail laying is completed through the most rugged section of the route and is now approaching the picturesque village of Beddgelert. We observed the loading of ballast onto rail wagons at Rhyd Ddu during our stopover there. With the completion of the line through to Porthmadog now approaching reality, the extension is also attracting interested visitors. The WHR has arranged for an open-top bus service (Route S96) to operate along the route during school holidays.

The extension through to Porthmadog is scheduled to open in October 2009. An additional Garratt locomotive, No.87, one of the original 1938 batch of NG/G16s built by John Cockerill in Belgium, is being overhauled at Boston Lodge to augment motive power for the extension and four new carriages are under construction.

Editor, 10/06

The crew of Beyer Garratt No. 138 (BP 7863 of 1958) reflect on their journey on arrival at Rhyd Ddu on the West Highland Railway with the morning train on 17 October 2006. *Photo: Bob McKillop*

The slate quarry demonstration trackwork at the Penrhyn Castle Industrial Railway Museum with the restored Ruston & Hornsby 20DL 4wDM loco ACON and rolling stock. *Photo: Bob McKillop*

ERRATA/CLARIFICATION

Thanks to Chris Stratton for pointing out some issues relating to LR 190. The 'Ron Leonard' item on p.26 should correctly have been headed 'Rod Leonard', and the correct identity of the Planet locomotive he owns is 3540 of 1952. In the Alexandra item on page p.27, the maker of *FLORA* is given as Kelly & Lewis. As a point of clarification, this is indeed the locomotive used on the wartime Captain Cook Graving Dock construction. It was supplied by Caldwell Engineering, and a photograph taken at the Kelly & Lewis works in Melbourne has encouraged some researchers to suspect that it was built there.

Members of the group standing in front of the Dreamworld Perry locomotive on p.29 of LR 191 were wrongly identified. Left to right they are in fact: Casey Hancox, Ted Hancox, Paul Jones and Peter Gough.

From left to right, Couillet 0-4-0T locomotive CARBON *(986 of 1889), NA 2-6-2T No.6A (Newport 1901) and 2-4-2ST 861* J.C. REES *(Couillet 861 of 1886, rebuilt Walhalla & Thomson River Steam Tramway 1974) make a parallel run in Gembrook yard during 861's 120th Birthday celebrations on the Puffing Billy Railway, Sunday 17 September 2006. Photo: Frank Stamford* ❑ *Simplex Mechanical Handling 4wDH locomotives 14 and 15 (122U136 of 1973 and 122U156 of 1975) gather at the entry to the Lautoka Mill full yard, Viti Levu, Fiji, on Friday 6 October 2006. Photo: John Browning* ❑ *The Wee Georgie Wood Steam Railway's flagship locomotive 0-4-0WT* WEE GEORGIE WOOD *(John Fowler 16203 of 1924) is back in operation for the 2006-2007 season following the completion of some major boiler repairs. On an overcast Sunday 1 October 2006, Rob Bushby photographed it hauling its firefighting wagon and restored Mt Lyell bogie carriage along a picturesque section of the line.*