LIGHT RAILWAYS

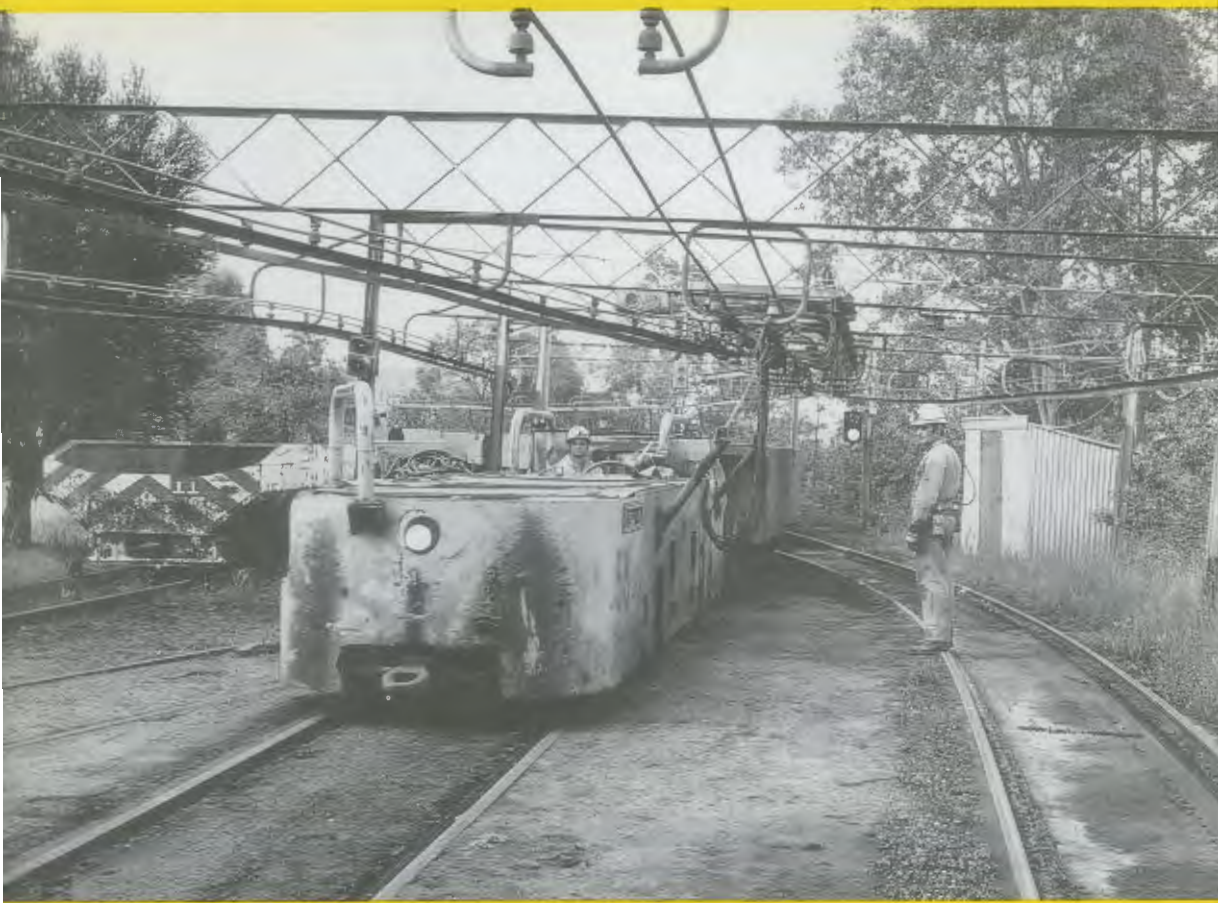
Number 108 April 1990

Stockrington No. 2 Colliery Trolleywire Haulage System, NSW

Locomotive *Koumala*

Mt Bischoff Underground Locomotives

ISSN 0 727 8101



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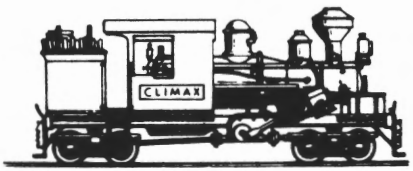

Light Railway Research Society of Australia Inc.

PO Box 21, Surrey Hills Vic 3127

COUNCIL
President: Mike McCarthy (03) 762 5847
Secretary: Jack Stock (03) 808 6601

New South Wales Division
Address: PO Box 290, Burwood NSW 2134
President: Jeff Moonie (047) 53 6302
Secretary: Craig Wilson (02) 484 7984

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Light Railways Editor: Bob McKillop, 10A The Bulwark, Castlecrag NSW 2068; Phone (02) 958 4516. Articles, photographs and letters welcome.

Cover: Jeffrey trolleywire locomotive No. 56 ready to leave the surface at Stockrington No.2 Colliery for Buchanan loading point. The complexity of the mechanisms for the overhead turnouts is apparent.
Photo: Brian Andrews

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EDITORIAL

This issue is my 40th as editor of *Light Railways*. In my inaugral editorial (*LR.69* of July 1980) I expressed the hope that the high standards of the journal would be maintained and that this might achieve a more secure future for the Society and its journal. In the first aim I have been rewarded by the excellent standard of contributions submitted by members on a regular basis. This issue — with its outstanding article, photographs and drawings by Brian Andrews, backed by interesting short items and letters — provides an excellent example of the standard we have been able to achieve.

The second aim has proved more elusive. While the LRRSA has achieved some financial security over the past decade, membership has remained static. *Light Railways* has, I believe, provided a wide range of well researched and interesting material of appeal to an audience beyond the specialist railway enthusiast, but we have not been successful in promoting membership to a wider interest group. Perhaps there is need for "new blood" to take up this challenge.

When I took on this position, I indicated my belief that there should be a change of editor after five years. Ten years have now passed. This is therefore an appropriate time to consider such a change. Accordingly, I welcome contact from any member interested in taking up the position of *Light Railways* editor.

Erratum

Oops: we lost a year! *Light Railways* Nos. 101-104 should have been designated as Volume XXVI; Nos. 105-108 are Volume XXVII.

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THE TROLLEYWIRE LOCOMOTIVE HAULAGE SYSTEM AT STOCKRINGTON NO. 2 COLLIERY

by Brian R Andrews

Introduction

The Stockrington valley, situated some 20 kilometres to the northwest of the industrial city of Newcastle, contained two major coal mines tapping the West Borehole coal seam. These collieries, Stockrington (No.1) and Stockrington No.2 were developed during the mid-1920 and early 1940 periods respectively to produce coal by "hand' mining methods. Coal was hand filled into skips of approximately one ton capacity and transported to the surface by "endless" rope haulage, where they were tipped, the coal screened and loaded into rail wagons for distribution.

By the late 1940 and early 1950 period, with mechanisation of the coal mines of New South Wales inevitable, J & A Brown & Abermain Seaham Collieries Ltd (later Coal & Allied Industries Ltd) planned a new entry to mine coal by mechanical methods from the virgin areas contained beyond the workings of these adjoining Stockrington No.1 and No.2 Collieries. Accordingly, the No.3 Tunnel of Stockrington No.2 Colliery was developed. Entry to the reserves was by a tunnel driven from the outcrop of the seam along the barrier separating the two collieries.

Before work could commence on driving this tun-

Trolleywire locomotives 52 and 55 at the Buchanan Loading Point, November 1983. Author's photo

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nel, it was necessary to excavate a flat area on the sides of the mountain ridge to allow construction of the necessary facilities required in the establishment of a coal mine. The driving of No.3 Tunnel commenced on 10 March 1952 and was directed to link up with a previously worked section of Stockrington No.2 Colliery. When the connection was made, No.1 and No.2 Collieries were closed and, wherever possible, the workmen from these two mines were absorbed into the workforce at Number 3 Tunnel. Henceforth, the new working became locally known as Stockrington No.2 Colliery.

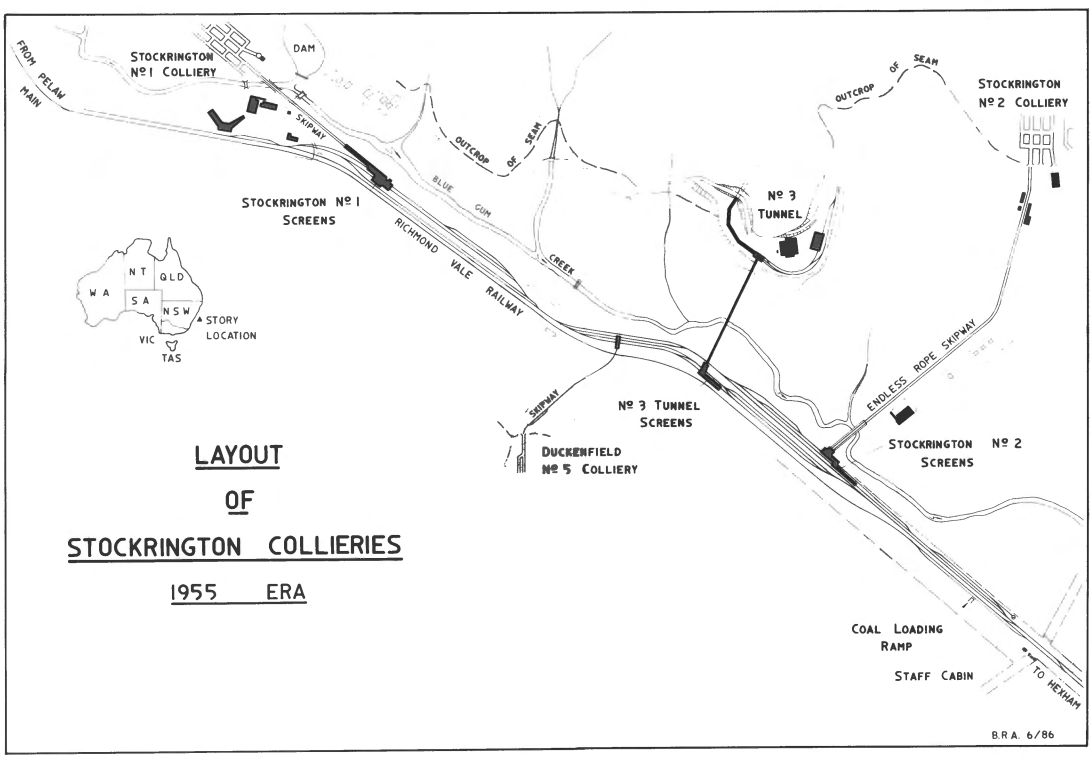
Coal Transportation

Since the long distance transportation of coal by conveyor belt was still in its infancy stage at this time, an alternative to one ton skips and endless rope haulage had to be found. The method adopted was to move coal to the surface in large capacity mine cars hauled by electric trolleywire locomotives. This system was being used successfully on an extensive basis in the United States and had already been adopted locally at John Darling, Burwood and Lambton collieries, all owned by the Broken Hill Proprietary Company Ltd (BHP). Similar systems were also installed at Northern (Rhondda) Colliery and Awaba State Mine during the early 1950s.

The arrangement used at these mines was the 'tramway' system in which there was a single overhead wire as the positive conductor, with the rails serving as the negative. The Stockrington system differed from this arrangement by using a 'duplex' system with two overhead wires, one positive and the other negative. This did away with the need for insulating and bonded rail joints as well as minimising arcing. The shoe attached to the pantograph was fabricated to sit over both conductors and rode along these as the locomotive moved. To allow for any irregularities in the trackwork or conductors, the shoe was attached to a flexible arm which would move up or down to suit the trackwork or conductors. These conductors were attached by an insulator to an inverted "U" shaped bracket which was fixed to the necessary conductor supports.

Trackwork

The trackwork was constructed to 3ft 6 in (1067 mm) gauge as this is the standard for mechanised mining. It was laid with 80 lb/yard rails



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sitting on wooden sleepers. A set of runaway points were provided just "inbye" (end facing into the mine) of the portal (tunnel mouth) to protect the mainline from a runaway on the surface. The trackwork was laid to follow the natural dipping of the coal seam and, consequently, severe grades against the load were encountered in several locations on the main travelling road.

The most notable of these was situated some 3000 ft (900 metres) in from the portal. When originally mined, the grade was too severe and the locomotives stalled on many occasions under load. To overcome this problem, some 1000 ft (300 m) of floor stone were removed to relieve the grade. Up to 8 ft (2.4 m) of stone was removed in places and the area became known locally as "the cutting". The resultant grades became 1 in 28/21.4/30 and, with careful driving, they could be overcome without difficulty under load conditions. However, a short section of 1 in 20 against the load was encountered on the Sugarloaf travelling road, but posed no major problem. In the Buttai Section all grades were in favour of the load.

Collector arm of the "duplex" trolley wire system.

Construction of the trolleywire system around 1954. This scene shows the area leading up to the dump hopper before being roofed over, with only the centre track electrified. The traffic officer cabin is on the right.
B Andrews collection

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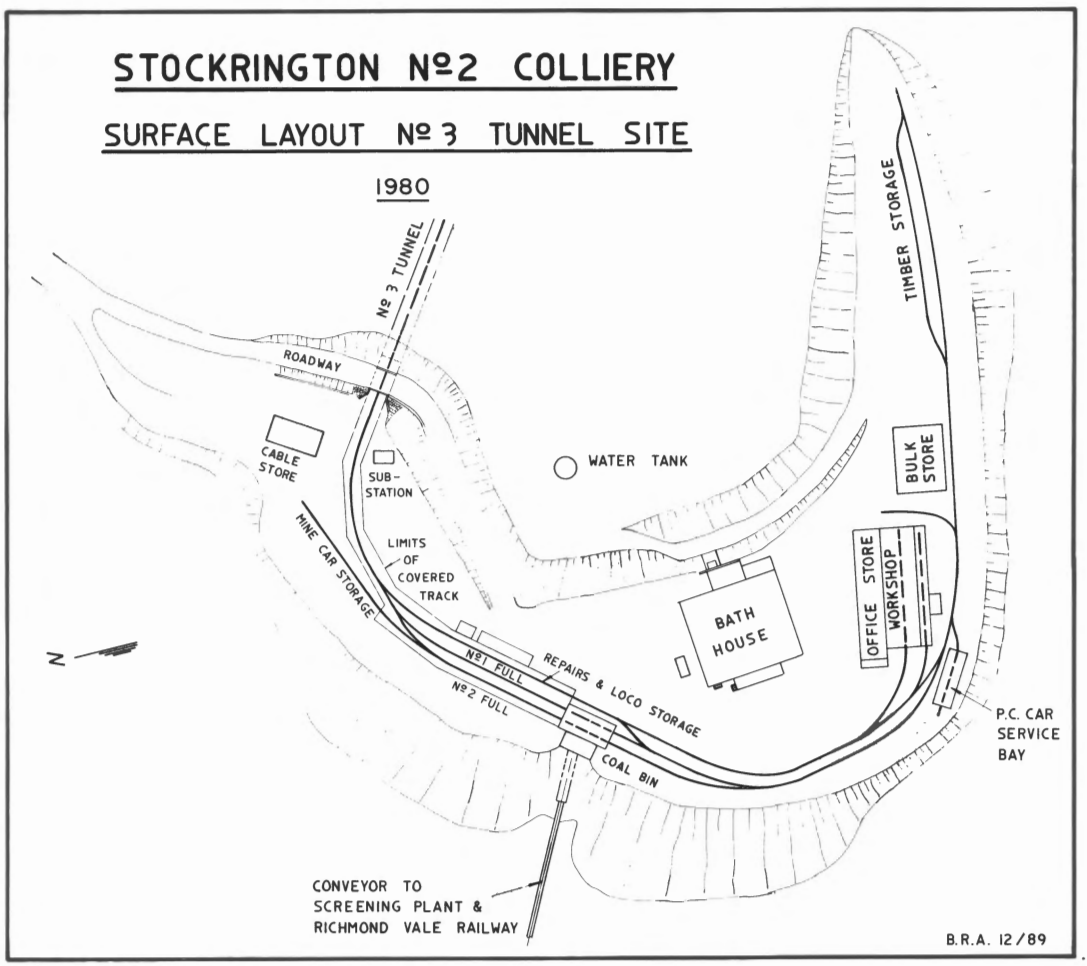
Overhead Conductors

The overhead conductors consisted of two hard drawn copper conductors, 3/4in (20 mm) in diameter along the main travelling roads and 5/8in (16 mm) diameter along the roadways into the panels of the workings. The latter conductors were removed when the panel was completed for reuse in the next panel.

The conductors were held by insulators to the support brackets. Since there were two conductors and the shoe ran along the top rather than underneath (as with single wire installations), this posed a major problem at all turnouts along the trackwork, as the two wires could not cross. To overcome this problem, the two conductors were fitted with a hinged mechanism at the turnouts which was operated by an electric motor. The mechanism was synchronised with the changing of the points.

Lights were mounted at all turnouts to indicate the direction in which the points were set. A red light indicated that the points were set for the turnout off the main line, while a green light indicated that the points were set in favour of the direction of the main line. The points, overhead wiring mechanism and lights were operated from a switch mounted on the roof over the centre of the track and situated approximately 100 metres away from the points. A rope was attached to the switch and hung down to within arms reach to enable the points etc to be changed while the train was in motion. As the train approached a turnout, the crew would pull the rope as they passed under, and the



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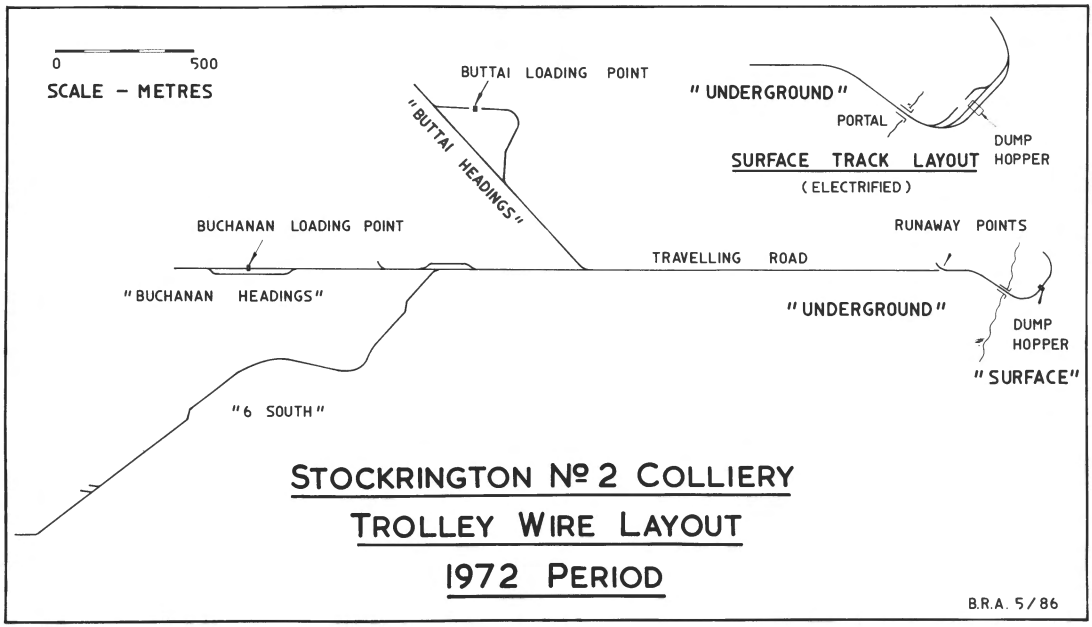

points and conductors were set accordingly for their destination by the time the train reached them.

Power Supply

Initially power to the troleywire system was supplied at 250 volt DC by a 400 kW generator situated in the mine one mile (1.6 km) from the tunnel mouth. The generator was driven by a synchronous motor. Later it was found necessary to supplement the power supply at the surface with a 235 kW mercury arc rectifier.

At a later date another 235 kW mercury arc rectifier was installed at a point approximately 3/4 mile (1.2 km) inbye of the 400 kW generator to further increase the power supply. At the same time, a 235 kW solid state rectifier was installed on the surface. Finally, the 400 kW generator was replaced by a 235 kW solid state rectifier. However, the 580 hp synchronous motor which drove this generator was retained for power factor correction at the mine.

The additions and alterations to the power supply were necessary to give a more evenly balanced power supply at the locations where it was needed most due to the severe grades against the loads at these locations.

The Trolleywire System

When the driving of the transport tunnel commenced, the coal was "wheeled" by shuttle cars from the coal face to the surface and dumped into a coal bin constructed near the portal for this purpose. As the shuttle car run in the new tunnel became longer, tracks were laid in the travelling road along with overhead conductors and a dump hopper below the rail level, and the trolleywire locomotives and mine cars were brought into use. Until the travelling road reached the limits of the workings, the mine cars were shunted into the mine as no runaround loops were formed in the panel adjacent to the portal and travelling road.

By April 1953, a small panel inside the portal and adjacent to the main travelling road had been developed and laid out for locomotive haulage. The coal won in this section was 'wheeled' from the surface by shuttle cars and dumped into a road bin located near the portal, and then transported by motor lorry to the screening plant at No.2 Colliery. It was then loaded into rail wagons.

By the end of 1953, the main travelling road had been driven some 600 metres to connect up with the existing heading in the workings of No.2 Colliery. As it was necessary to lay some 750 metres of trackwork and overhead conductors in this heading before production could commence in the virgin areas situated beyond the heading, coal was produced in the section inside the portal whilst the main travelling road was being set up.

The conveyor belt to transport the coal across the gully from the dump hopper and the screening plant at the rail sidings was completed early in 1954 and

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this allowed the trolleywire locomotive and mine cars to be placed in service. The first coal haulage by trolleywire locomotives and mine cars occurred on 15 March 1954. Train loads of three mine cars were shunted into the workings and, when loaded, were hauled to the surface, unloaded into the dump hopper and transported by conveyer belt to the screening plant. Only one locomotive was used, the other two being more or less stored under cover until March of the following year, when development beyond the workings of No.2 Colliery commenced, allowing No.3 Tunnel to come into full production.

The section adjacent to the portal ceased producing coal during 1956 and the locomotive serving this section was placed in operation with the other two units on the longer runs hauling coal from the workings beyond the limits of No.1 and No.2 Collieries.

After the initial transport heading development was completed, production sections were established consisting of a seven heading system with 18 ft (5.5m) wide "boards" worked to 8 ft (2.4m), leaving 100 x 66 ft (30 x 20m) standing pillars for later extraction.

The coal face was undercut mechanically using Anderson & Boyes coal cutters, while Homac hand-held electric borers were used for drilling the face for explosives charges. After firing operations, the broken coal was loaded out by Joy 11 BU loaders into Joy 10SC cable reel shuttle cars and transported to the loading points for transfer to the mine cars. These mining methods gave an output of approximately 2000 tons per day, which represented an output of 8-10 tons per manshift, a good production figure for the 1950 period.

Later continuous mining machines were introduced into the workings. These machines cut and load out the coal in one operation, doing away with the undercutting, boring, shooting down with explosives and the loading out sequence. The Stockrington mine consistently produced coal in excess of 15 tonnes per manshift using the continuous miners and frequently bettered 20 tonnes per

A trolleywire locomotive and two mine cars arrive at the dump hopper, circa 1954.

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Jeffrey trolleywire locomotive No.1 (55) at Stockrington No.2 in May 1976. Roll bars had not been fitted at this time. Author's photo

manshift. Even in the last months the colliery worked, record tonnages were being produced.

Locomotives

Following investigations, it was found that three locomotives were required for coal haulage duties. Two would be used to bring the mine cars from the workings, while the third would be a spare locomotive in case of breakdown or maintenance. Accordingly, an order was placed on Jeffrey Manufacturing Company in Columbus, Ohio, USA, through the Australian agents, FH Fearon & Sons (Pty) Ltd of Sydney, for the supply of three twenty ton trolleywire locomotives.

These three locomotives were constructed during July 1951 and given Serial Nos 8855, 8856 and 8857. From information kindly supplied by Dresser Industries Inc, Jeffrey Division, these locomotives were shipped to Australia on 29 October 1951: When they arrived at Stockrington No.2 Colliery in early 1952, they were stored until required. They arrived painted Jeffrey blue and were given the road numbers 1, 2 and 3, as well as Nos 55, 56 and 57 respectively, which were derived from the last digits of their serial numbers. As well as the numbering system, each locomotive was painted a different colour for ease of identification: No.55 red, 56 tangerine and 57 orange. The colour of No.56 was later changed to green, as tangerine and orange were too close.

The locomotive frames consisted of heavy rolled steel plate (2-3 in thick) stiffened to form a rectangular box type structure with gently curved ends. The side plates were cut away to take the axle boxes, which work in machined guides of hornplate construction. The frame is supported on two axle sets by rigging to the axle boxes from double helical springs. The outer springs normally carry the load, while the inner set comes into operation when heavier loads are applied. The traction motors are coupled by gearing to the axle, fitted between the frame, and cooled by a blower fan.

The Jeffrey locomotives were rated at 10,000 lbs drawbar pull at 10 mph and fitted with 2 x 150 hp traction motors, with a 5 hp blower fan cooling each motor. They were not fitted with dynamic braking when constructed, but owing to the severe grades encountered in the Buttai section of the mine, this type of braking was fitted during 1957.

Drivers and shunters compartments are fitted at opposite ends of the locomotive. The necessary equipment to drive the unit is fitted in the drivers end, while the air compressor for the braking and sanding gear is in the shunters end. The air reservoir is located adjacent to the shunters compartment and is fitted between the frame. The resistor banks for dispensing the heat generated under dynamic braking are fitted above the air reservoir.

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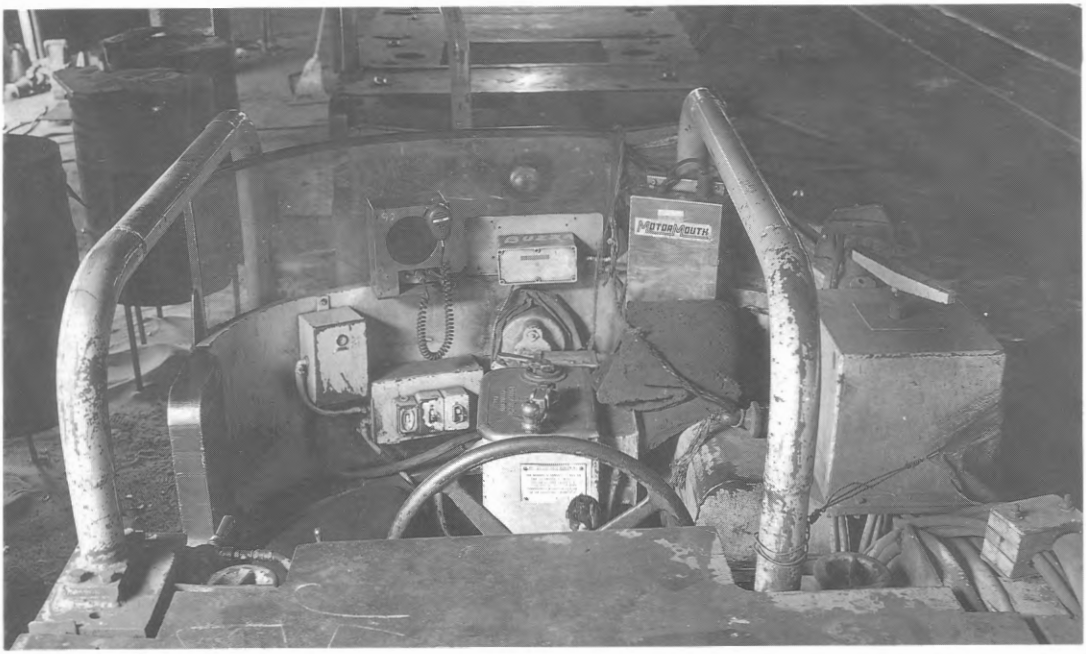

The drivers end of Jeffrey locomotive. Author's photo

As the underground workings progressed, it was apparent by early 1957 that a further locomotive was required for haulage duties owing to the longer distances now encountered within the workings. Since the Jeffrey locomotives were giving excellent service, an order for the supply of a 20 ton trolleywire locomotive was placed through Perkins of Sydney (Australian agents) on Jeffrey Manufacturing Company of Colombus, generally to the same specifications as the existing locomotives, but including dynamic braking.

This locomotive was completed during early 1958 and given Serial No. 9065. It was shipped to Australia on 24 April 1958, consigned to Perkins Pty Ltd, and entered service later that year. This unit differed from the other locomotives in having 2 x 165 hp traction motors, but all parts were generally identical and interchangeable. This locomotive was given the road number '4' at Stockrington No.2 Colliery. It was never given the number 65 like its sisters. No.4 remained painted Jeffrey blue until the 1970s.

No.4 was used intermittently during the 1970s after the haul distances were shortened and locomotive No. 8952 (see below) had been placed in service. It was the only locomotive to be withdrawn from service prior to cessation of the system. This occurred about 1980, when No.4 was used as spare parts to keep the other locomotives in service.

Rolling Stock

The rolling stock for coal haulage consisted of nominal 12½ tons capacity bottom-dump mine cars and these eventually totalled 54. The first went into service during 1954 and the last in June 1958. The cars were the largest used for underground haulage in the Australian coal mining industry and were designed and constructed in the workshops of Hexham Engineering, a subsidiary of J & A Brown & Abermain Seaham Collieries Ltd. They were fabricated in all steel construction with four bottom dump doors and were fitted with "axleless" compensated bogies to allow for trackwork irregularities. Each mine car was fitted with a male coupling on the "inbye" end and female coupling on the "outbye" end.

The number of mine cars in service varied throughout the years as production increased and haul distances became longer. In later years when new car bodies were constructed, they received the road numbers of the mine cars they replaced.

During 1967, two mine cars, Nos 4 and 47, were modified by having their sides and ends extended to increase their capacity. They were taken to Aber-

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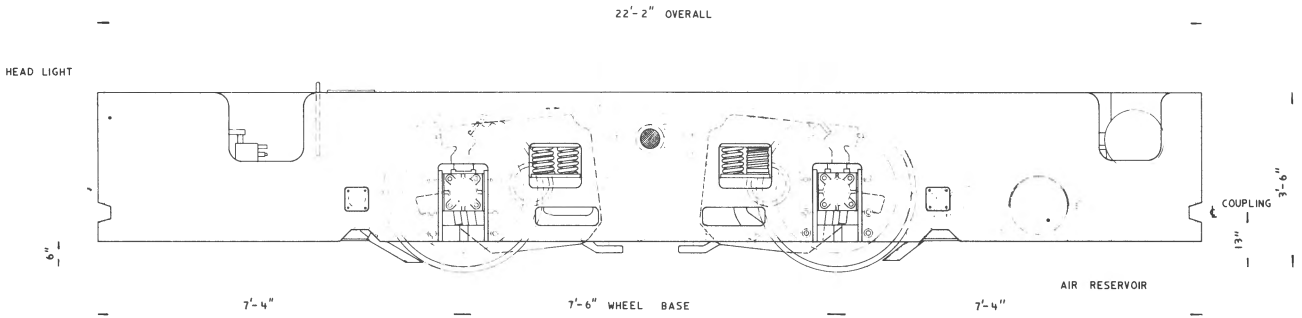
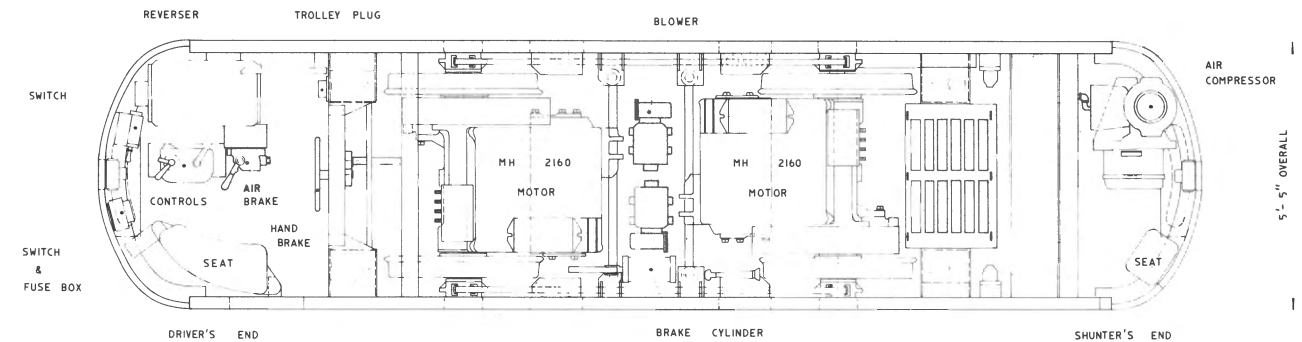


ELEVATION



PLAN

JEFFREY 20 TON TROLLEYWIRE LOCOMOTIVE

S/Nº: 8855, 8856 & 8857

— AS BUILT 1951 —

B.R A. 10/89

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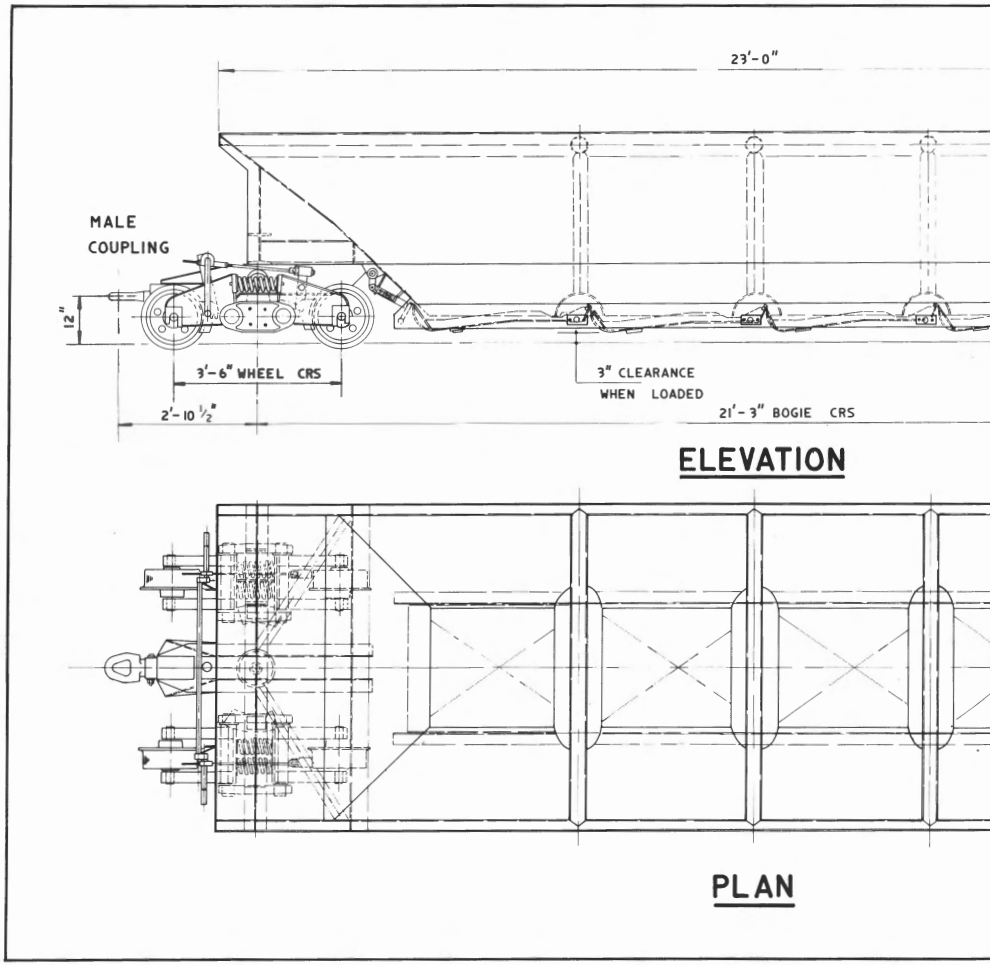

dare East Colliery near Cessnock and used to develop the pit bottom of that colliery which was then being opened up. Shuttle cars loaded direct into the mine cars and these were direct hauled to the surface. The mine cars were returned to Stockrington No.2 Colliery in June 1968 after conveyor belts had been installed at Aberdare East, and remodified to suit the local loading gauge.

Surface Track Layout

The surface track consisted of two loops laid adjacent to and parallel with the mainline. The mainline and outer loop passed over the dump hopper (storage bin). The inner loop bypassed the hopper and rejoined the mainline near the workshop before it rejoined the outer loop. This section of track was not electrified.

The mainline was also known as No.1 Full Road, the outer loop as No.2 Full and the inner loop as the Empty Road. A short shunt was located off the outer loop near the portal for mine car storage purposes and was not electrified. The inner loop was used for repairs and maintenance of the mine cars and also for locomotive storage when not in use.

The whole of the surface trackwork from the portal up to and including the dump hopper was under cover. This was to prevent any adhesion problems for the locomotives during periods of wet weather.

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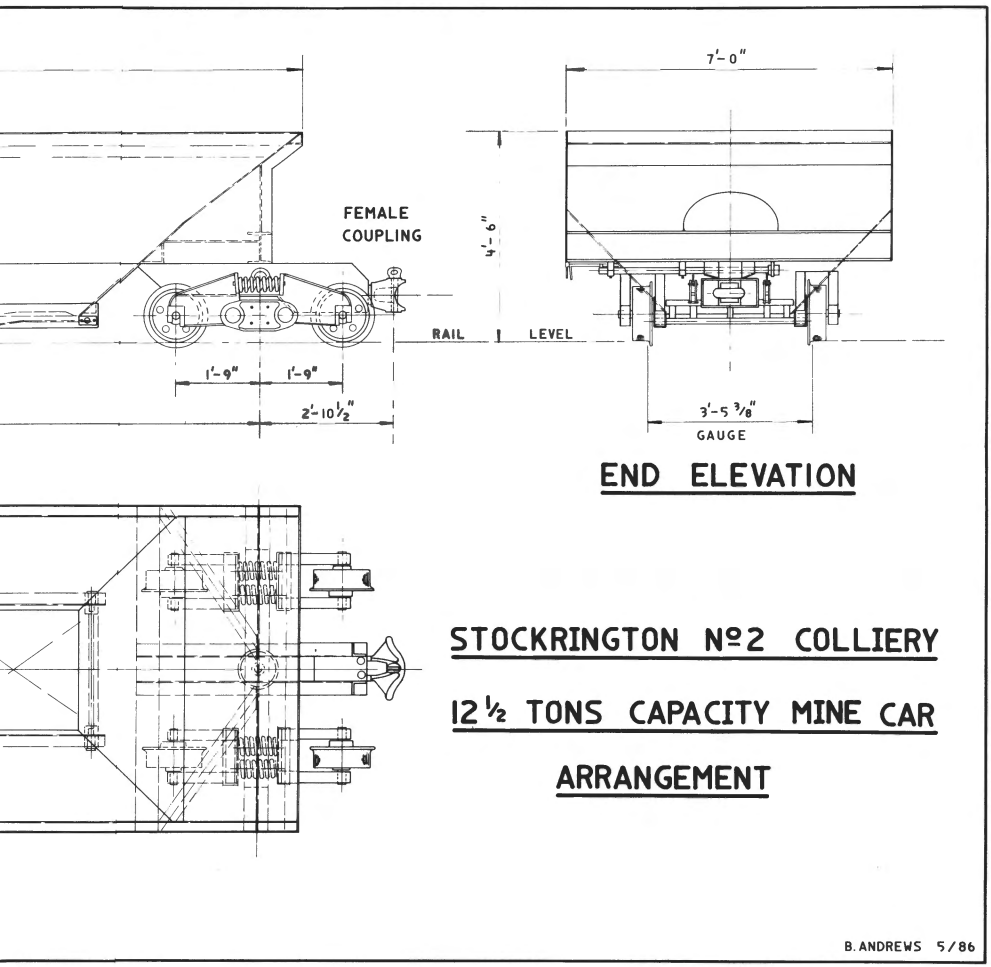

Train Working and Control

Initially the locomotives operated with the drivers end facing into the workings. They were later turned. During development of the transport tunnel and mine workings, the empty mine cars were shunted into the mine, loaded and then hauled back to the surface and dumped. This method was used until the necessary loading points and run around loops had been established in the relative sections of the mine. Following this development, mine cars were pulled into the mine, shunted into the loops, and the locomotive ran around to the full section and hauled the cars from the mine.

The electric locomotives were fitted with two-way radio installations. When the mine first came into production, a traffic officer was stationed in a control cabin on the surface near the dump hopper and controlled movement of the train sets along sections of the track. All drivers were conversant with what was actually happening as they could hear all instructions through the radio fitted to their locomotives.

After the system had been in operation for some years, the traffic officer was dispersed with and the movement of trains was controlled by the locomotive drivers. They determined where each other were over the two-way radio and worked their trains to the required destination.

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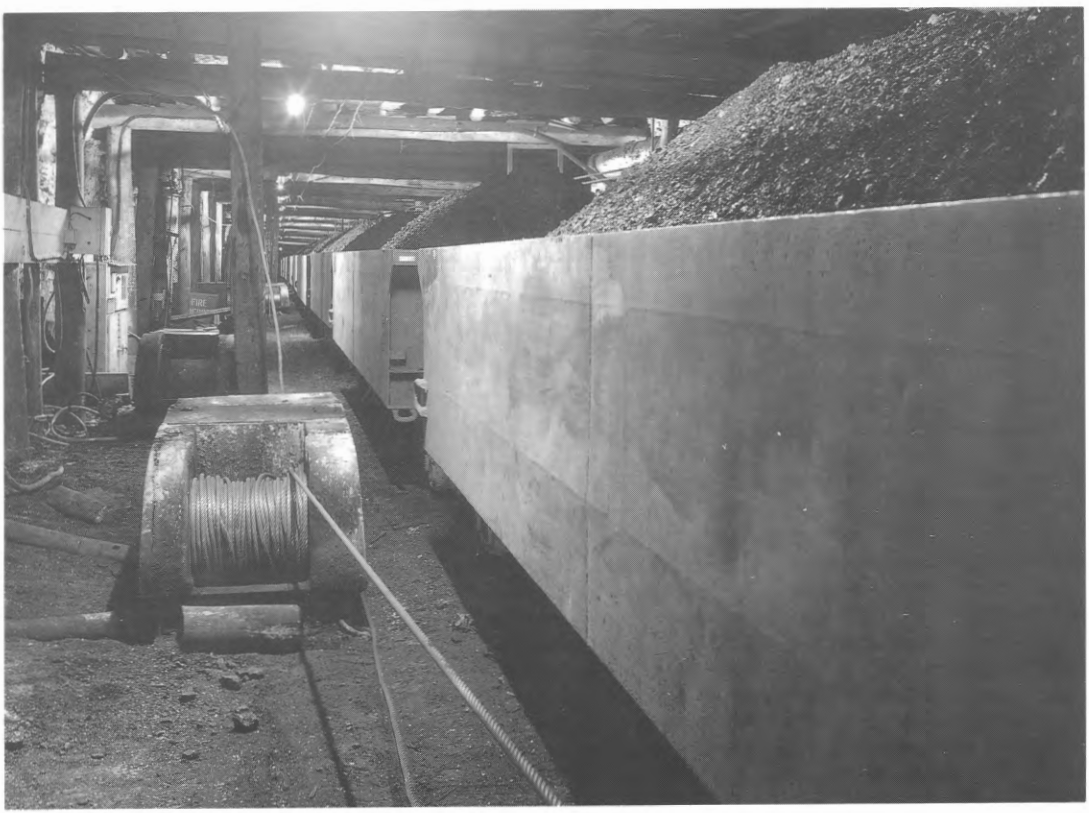
The number of mine cars to a train varied in the early years of operation as experiments were carried out to determine the most economical load in regard to power consumption and frequency of trips. Initially six cars were hauled by a single locomotive and ten by two locomotives. These loads proved to be too severe for the power consumption and locomotives stalled on the steep grades. Following addition of extra power supply facilities, it was found that loads of five (single) and nine (double) full mine cars could be readily handled. The normal working for double loads was for the train locomotive to pull the mine cars with the banking locomotive pushing at the rear.

In cases of breakdowns or locomotive shortages, different methods of train working were sometimes used. For instance, double heading consisted of two locomotives at the head on odd occasions. On at least one instance when single loads were being worked from the Buchanan loading point because of a locomotive breakdown, it was found that both the Buchanan and Buttai sets were arriving at the Buttai turnout at the same time. To keep the loading points in operation, both sets were joined together and worked out of the mine. The trains consisted of locomotive, five full mine cars, locomotive and five full mine cars.

Coal Loading

During the initial years the mine cars were directly loaded from shuttle cars. These are rubber-tyred vehicles used for transporting coal from the working face to either mine cars or a conveyor belt. A timber ramp constructed from sleepers was made adjacent to the rail tracks and the shuttle cars were driven up these for loading the coal direct into the mine cars. The empty cars were 'spotted' at these ramps by a machine known as a 'car puller'. This consisted of a rope drum geared to an electric motor with a wire rope attached to the drum. The wire rope was pulled off the car puller by a horse and attached to the empty mine cars for hauling through the loading point.



"Car pullers" haul mine cars through Buchanan Loading Point. Author's photo

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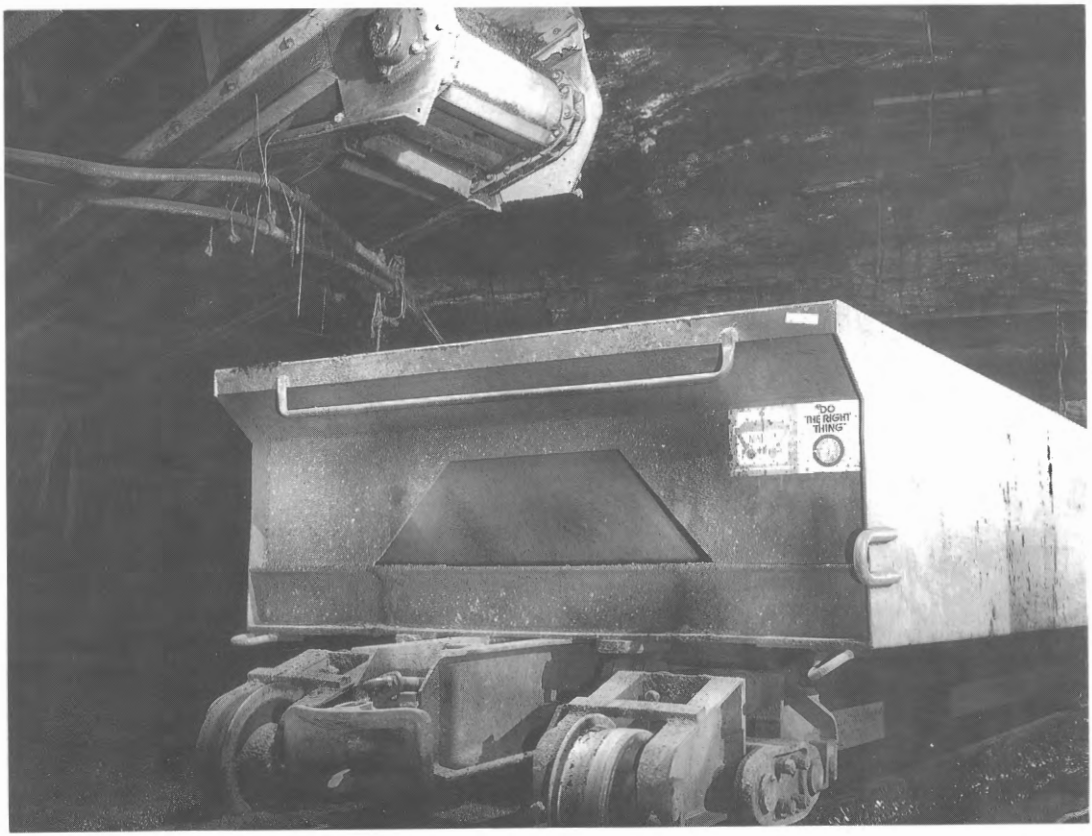

Loading coal at Buttai Loading Point. Author's photo

As the mine workings progressed, rail tracks were extended to follow these workings. However, as conveyor belts proved themselves, it was decided to establish central loading points at selected locations in the mine workings. Coal was conveyed by belt to these loading points, thus relieving the need to extend the overhead wiring system to all parts of the mine.

The central loading points consisted first of a 'butterfly' chute arrangement at the end of the conveyer belt whereby the mine cars were loaded by swinging the chute from one car to another. Eventually a storage bin and loading boom was established at selected locations and production was conveyed from several sections of the mine to this loading point. These loading points were named relative to their location in the mine.

In early 1967, a design was prepared by Hexham Engineering to simplify the loading of mine cars. A 25-ton capacity storage bin was installed in a 'cut-through' (passage between two headings) and a loading boom was extended out over the tracks. The bin and boom was fitted with a flight conveyor for moving the coal. The trackwork was on a loop system with a dead-end shunt being provided to enable the placing of empty mine cars in the relative end of the loading point.

The length of the dead-end shunts, empty and full sidings varied according to the amount of coal being produced from the area. Car pullers were installed on the full side of the loading point to enable spotting of the mine cars. When the car was full, the car pullers would pull the set of mine cars forward.

The rope attached to the car pullers was pulled out by a horse. Stables were established at each loading point to cater for these brilliantly trained animals. To watch these horses at work was an experience very few people were fortunate to witness.

When the last mine car had been loaded, the horse would automatically back up to the rope at

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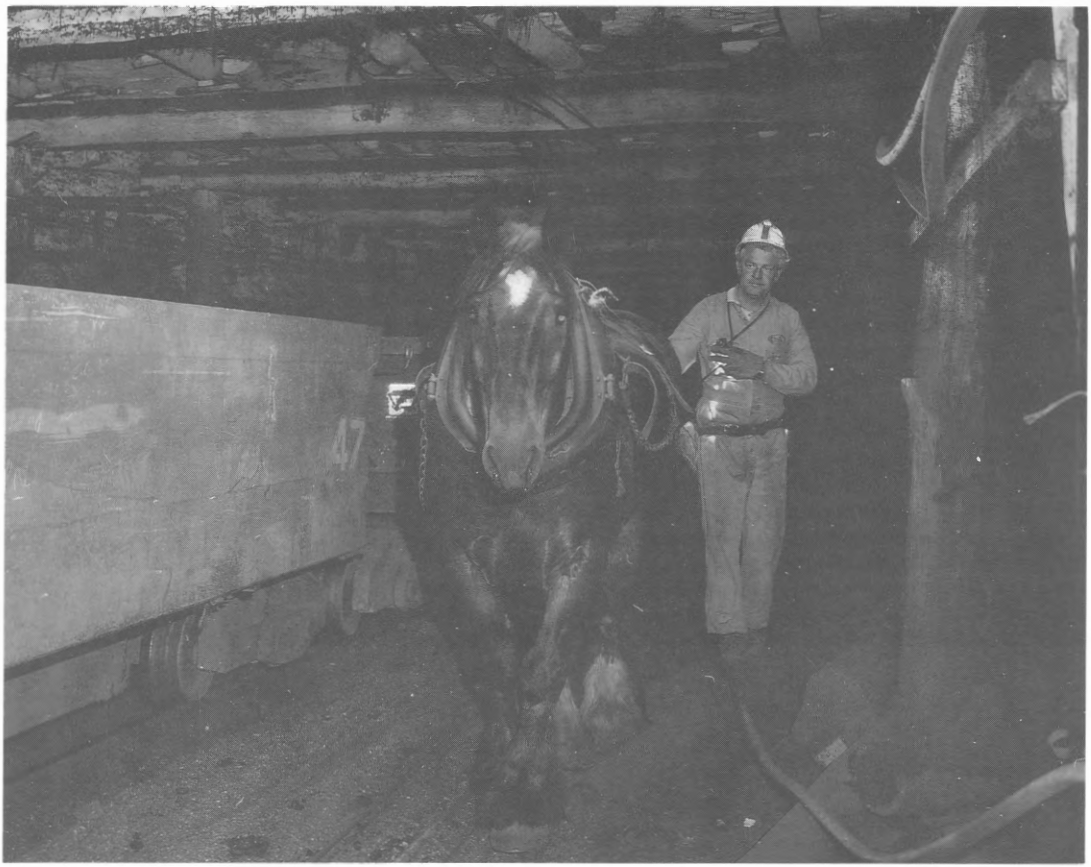

Colliery pony *Podge* returns from pulling out the rope at Buchanan Loading Point, November 1983.
A&C Underground Photographics

the last car and await the attaching of the rope by the person manning the loading point. As soon as the rope was attached, off the horse would go, pulling the rope off the car puller to the location where the next set of mine cars would automatically stop in the empty sidings. When the rope was removed from his harness, the horse would wander back to his waiting place out of harms way at the loading boom.

The first loading point with a butterfly chute arrangement was established in the section of the mine known as 3 South West in early 1961. It was situated 1.82 mile (2.91 km) by rail from the surface and operated until December 1967, when it was closed due to the Sugarloaf loading point coming into operation. This new facility was located 2.4 miles (3.78 km) from the portal and commenced operations on 15 January 1968.

Coal Unloading

A reinforced concrete storage bin, known as a dump hopper, of 500 tons capacity was constructed below rail level at the surface unloading point. Two sets of rails were constructed over the storage bin to enable full utilisation of its capacity. As the mine cars arrived at the bin, the shunter would get off the locomotive and, with the use of a "U" shaped tool, would pull out the catch of the locking device holding the doors up. The doors would drop between the rails, the locomotive would pull the mine cars across the bin and the coal discharged into the bin below. Fitted between the rails on the empty side of the bin was a mechanism known as a banana (because of its shape). This banana was raised and as the dropped doors passed over it, they were automatically lifted and locked closed in the mine car. When all the cars had passed over the banana,

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it was lowered between the rails to allow the locomotive and train to return to the mine.

Coal was fed from under the dump hopper by conveyor belt over the valley to the screening plant. Here it was screened and loaded into rail wagons for transport over the Richmond Vale Railway to the Hexham Coal Preparation Plant for washing.

Buchanan Storage Sidings

To support mining operations, a large amount of material is required. As the trolleywire system was extended to follow the workings it was considered desirable to establish storage sidings for these supplies in a suitable area in the mine for later distribution by battery locomotives over non-electrified track as and when they were required at the working face. The Buchanan headings, which were centrally located in the mine workings, contained a suitable flat area, and accordingly two loop sidings were established for the immediate storage of mining materials. Trolleywire locomotives worked the materials and supplies to these sidings, mainly on the afternoon shift. They were then distributed to the various working places by battery locomotives

Pulling the doors of mine cars using "U" shaped tool.
Photo: Brian Andrews

Goodman trolleywire locomotive at John Darling Colliery. This unit or a sister was hired to Stockrington No.2 Colliery in February 1968.
Photo: BHP Collieries

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during the day shift.

Increase in Production

During the latter part of 1967, a decision was made to increase coal production at Stockrington No.2 Colliery to meet market requirements. This extra production was to be won from the Mt Sugarloaf area of the mine and this necessitated the installation of the Sugarloaf loading point. The longer haulage distance and tonnages to be moved necessitated the introduction of extra motive power on the system.

Enquiries were made to AE Goodwin Ltd, Sydney (the Australian agents for Jeffrey) for the purchase of a 20 ton trolleywire locomotive. On 20 November 1967, the company quoted to supply "One (1) 20 ton Jeffrey Trolleywire Locomotive duplicate of locomotive Serial No. 8856 operating at Stockrington including dynamic braking", with a delivery time of 7-8 months from receipt of order at a cost of $Aust 83,075 Nett.

In the meantime, enquiries were made for the hire or purchase of a redundant trolleywire locomotive. It was revealed that the BHP Collieries Group had available a surplus Goodman trolleywire locomotive at their John Darling Colliery at Belmont, NSW. This unit, numbered 21, was inspected and was found, with minor modifications, to be suitable for temporary use at Stockrington No.2 Colliery. It was delivered on 30 January 1968 and was fitted with a trolley pole connector to suit the "duplex" system, two-way radio and new couplings. The locomotive entered service at Stockrington No.2 Colliery during February as a spare unit. It was used for coal haulage when a Jeffrey was stopped for maintenance and for the taking of supplies into the mine.

The Goodman locomotive was one of a batch of six units built by the Goodman Manufacturing Company of Chicago, Illinois, USA in 1943 for use at the three BHP collieries. These locomotives were rated at 10,000 lbs drawbar pull at 8 miles per hour, which was slightly less than the Jeffrey units. They carried Serial numbers 5403-5408 inclusive. Enquiries to John Darling Colliery failed to reveal the exact identity of locomotive No.21.

During May 1968, another Goodman locomotive belonging to the BHP Collieries Group was inspected with a view to purchase. This was situated underground at Burwood Colliery, Whitebridge NSW and had been in service until 11 April 1968. It was identical to the Goodman locomotive already on hire at Stockrington No.2, although in better condition, was considered unsuitable for purchase. It carried Goodman's serial number 5406 and road number BHP 1.

Additional Jeffrey Locomotive

As the Goodman locomotives were considered unsuitable for long-term coal haulage at Stockrington No.2 Colliery, AE Goodwin was requested to update their quotation for supply of a Jeffrey 20 ton trolleywire locomotive. Their quote of 6 June 1968 indicated a price of $Aust 97,942. It would appear that this price was more than expected and further enquiries were made for an alternative locomotive.

It was revealed that RW Miller & Co, who operated the Northern (Rhondda) Colliery near Teralba, had available a Jeffrey trolleywire locomotive similar to those already in use at Stockrington No.2 Colliery. After inspection, it was found that this unit was rated the same as the existing locomotives in use at Stockrington, although it was of overall different dimensions. It was in reasonable condition and could be put to work after conversion to double trolleywire operation and the fitting of a radio.

Subsequently, an agreement for exchange of mining equipment between RW Miller and Coal & Allied Industries saw the Jeffrey locomotive coming to Stockrington No.2 Colliery, while RW Miller would receive in exchange a Jeffrey AC Shuttle Car and a Goodman trolleywire locomotive on hire from John Darling Colliery, provided that BHP would sell it to Coal & Allied Industries. The unit ex-Northern Colliery had been built by Jeffrey in 1953, carried builder's number 8952, and was shipped to Australia on 27 February 1953. The locomotive weighed 20 tons, but was of much wider construction than the other Jeffrey units.

Although all the Jeffrey locomotives were rated the same 20 tons, it is quite obvious the No. 8952 was actually heavier than the four units delivered to Stockrington. This is evidenced in the fact that this locomotive was 6in wider in construction and the main side plates were 4in thick instead of 3in plates used on the other locos. It is considered that the 20 tons is American (40,000 lbs) which equates to about 18 tons, whilst possibly 8952 is 25 tons American (50,000 lbs) because of the extra width and plate thickness. While given the same rating as the previous four locomotives, it proved to be superior in pulling power when put into service at Stockrington. It was given the road number 52 (last two digits of its builders number), painted yellow and gained the nickname BIG YELLAW because of its size.

Central Loading Points

During the latter part of 1968 after it had been decided to extract coal from the former 3 South

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Jeffrey locomotive No.52 (B/No. 8952), *BIG YELLAW*, on the surface bin, November 1983. This is the train locomotive for the Buchanan Loading Point and will follow the empties in light. Author's photo

West area of the mine, it was necessary to refurbish the old loading point at this location to be known as 6 South loading point. A bin and boom was installed and came into operation during February 1969. However, its use was short as it had been decided to rationalise coal loading at two central locations within the mine workings. All coal produced was to be conveyed by belt to these loading points. This rationalisation would provide better utilisation of the locomotives and mine cars by shortening the haul distances.

The Buttai and Blackhill sections of the mine are on the 'rise' (coal seam increasing in elevation), and subsequently all loaded trains coming from these sections were continually braking as they dropped downgrade. For safety reasons it was expedient to eliminate coal haulage by locomotives from both these sections. Accordingly, a suitable flat area was selected in the Buttai section and the necessary roadways were driven to enable a central loading point to be established.

Work commenced during May 1969 installing the bin and loading boom which had been removed from the refurbished 6 South loading point. All coal produced in this section of the mine would now be conveyed by belt systems to this loading point for loading into mine cars and haulage from the mine. The loading point came into operation about July 1969 and was known as Buttai Loading Point.

For coal from the Buchanan area of the mine, it was decided to establish a central loading point in one of the existing loop sidings for material storage. Work commenced during October 1969 preparing the area. Over the Christmas holiday period the existing bin and boom at the Sugarloaf loading point were dismantled and reassembled as the Buchanan loading point. The conveyor system was extended to this location and came into operation on 12 January 1970. The haulage distance had been shortened by about ¾ of a mile (1.2 km) and this increased the locomotive and mine car turnaround.

During the early 1980s the Buchanan loading point was converted to automatic operation as far as the loading and movement of mine cars through the facility was concerned. As soon as the rope was attached to the last mine car, the loading point was switched to automatic operation. When the coal

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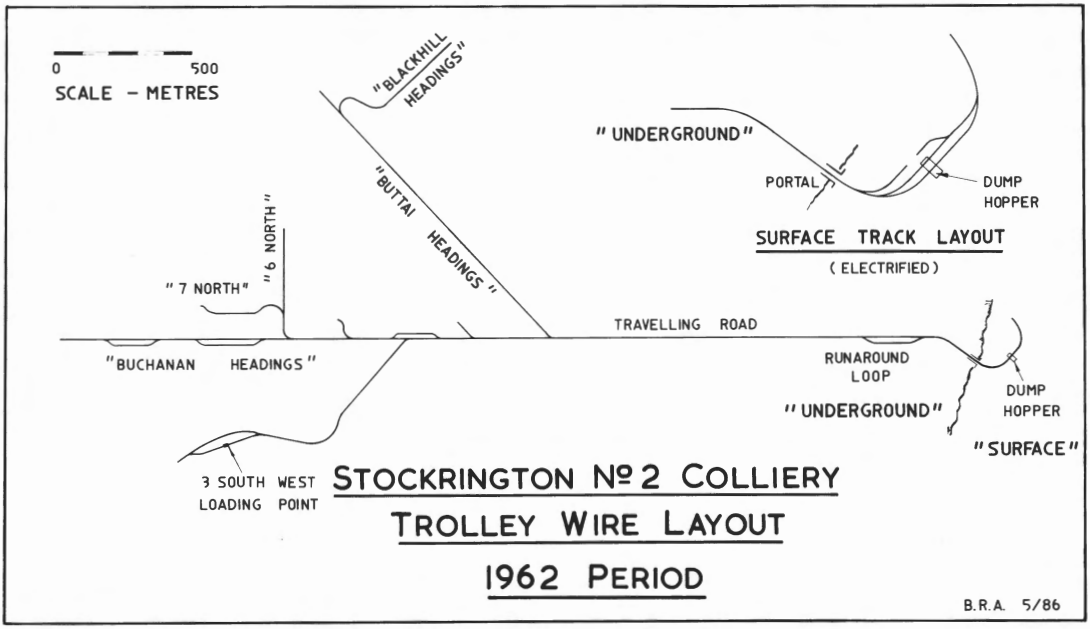

arrived in the bin, probes would automatically start the flight conveyors in motion and move the mine cars through the loading point. Manual return of the rope by horse was still necessary.

Locomotive Alterations

Over the years the locomotives were painted in various colour schemes. Eventually green was adopted as the standard colour. By the late 1970s period this evolved to green with yellow ends, the locomotive number being painted in green over the yellow. About this time, it was necessary to fit roll bars over both ends of the locomotive due to new regulations.

An additional locomotive was obtained from Awaba State Mine in 1983 after coal haulage by trolleywire locomotive had ceased in September 1983. At that time No.52 was set aside at Stockrington No.2 requiring repairs to one of its axles. The locomotives used at Awaba were similar, so one of their surplus units was purchased for spare parts to keep No.52 in service. The locomotive arrived at Stockrington No.2 in November 1983 and parts were exchanged with No.52. It was Awaba No.42, which had been built by Jeffrey in 1955 (Builders No. 9003). It was never used in service at Stockrington, which did not allocate a number to this unit.

Closure of the Trolleywire System

During the 1970s Stockrington mine operated with spasmodic fluctuations in production due to prevailing market conditions. The trolleywire system was allowed to run down with only minimal maintenance being carried out on trackwork and overhead. By 1980 it was increasingly difficult to obtain readily available spare parts for the locomotives and radios. Accordingly, it was decided to install a conveyor belt and phase out the locomotive coal haulage system.

The new system required driving of a new portal adjacent to the existing travelling road and connect up to an existing heading for installation of the conveyor belt. Preparations commenced in 1980 and by mid-1983 it was apparent that the end of the trolleywire system was not that too far distant.

By late 1983, the Blackhill/Buttai sections of the mine had run out of 'economic' coal and the Buttai loading point ceased operations on 3 November 1983. By this stage, the conveyor belt had been extended to within a short distance of the Buchanan loading point and the decision was made to cease coal haulage by trolleywire locomotives and mine cars. The last mine cars were loaded on 23 December 1983. The last set of full mine cars arrived at the surface at 9.30 am hauled by locomotive No.55 driven by Jack Deeks. Jack also had the honour to drive the first train from the mine when the system came into operation in 1954.

On this day, another era came to an end when Tommy, the last pit pony to be used at the mine, was retired. The Stockrington mine was the last major user of pit ponies in the NSW coalfields and

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only three months previously there were ten of these magnificent animals being used regularly in the mine. They were (for the sake of posterity) King, Murphy, Sam, Bluey, Nigger, Timmy, Podge, Silver, Tiger and Tommy.

When the Buttai loading point closed the mine cars used on this service were stored on the tracks at this loading point. As the Buchanan loading point was nearing the end of its life, excess mine cars were taken into the mine and stored wherever possible on trackwork that was not in use. When the last train had been unloaded, they were shunted back into the mine for storage along with the other cars.

Over the Christmas shutdown period, locomotive No.4 and the unit from Awaba State Mine were taken into the mine and stored at a convenient location. The four serviceable locomotives were stored on the surface and were used on odd occasions taking heavy machinery into and out of the mine. By February 1984, it was decided that these locomotives would be stored underground. Henceforth, materials transport in the mine would be handled by battery locomotives.

Battery Locomotives

Worthy of mention is the fact that Stockrington No. 2 Colliery operated a fleet of battery locomotives for materials distribution in the mine workings. Initially, these units transported supplies from the Buchanan storage sidings to the working places. After the sidings were converted to a loading point, the battery locomotives took the supplies direct from the surface to the working face.

The battery locomotives were manufactured by various makers and the number in service varied over the years. Most would have been transferred from the various collieries of the Coal & Allied Group and it is impossible to list in detail these locomotives. A diesel locomotive was placed in service in 1985, but was not successful and it was soon withdrawn.

Two Jeffrey battery locomotives remove mine cars from Stockrington No.2 tunnel on 9 August 1988.
Author's photo

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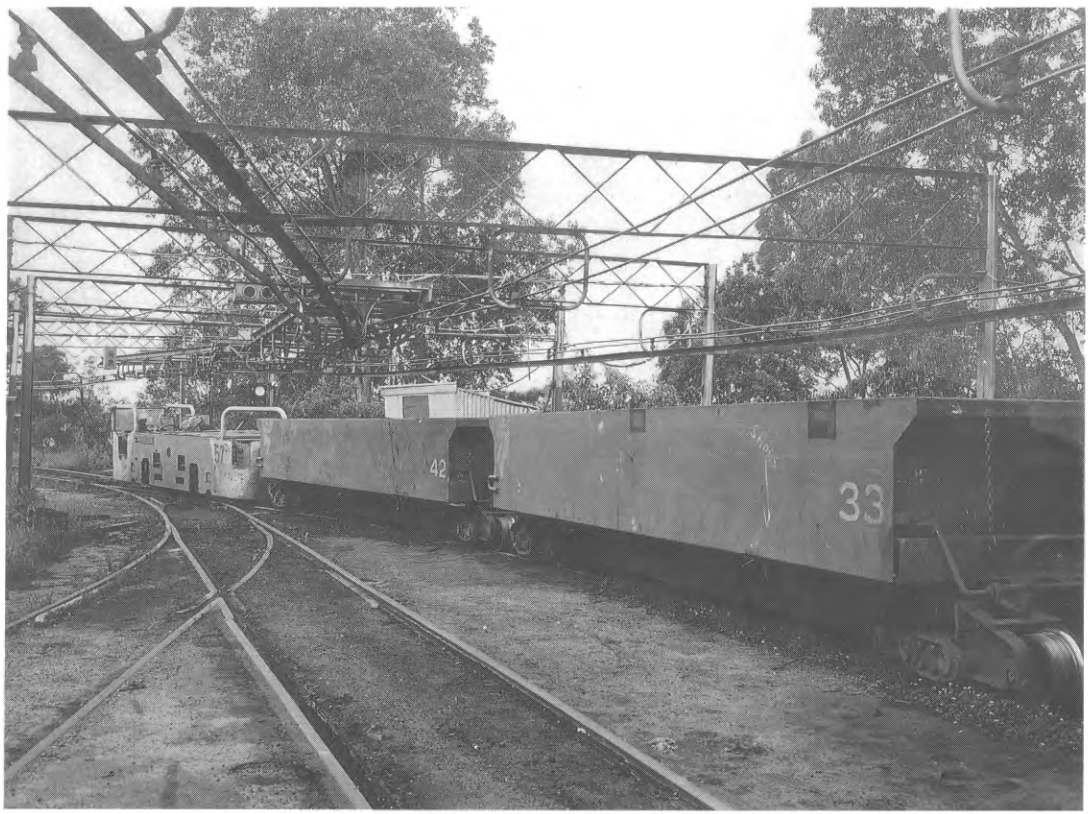
Typical Trips

To conclude this article, typical journeys from both the Buttai and Buchanan loading points are described to record something further of the history of the 'ultimate' as far as locomotive and mine car workings in the coal mines of New South Wales are concerned. They were railway operations that few people were able to witness.

On the first journey to the Buttai loading point, we proceed into the mine on locomotive No.57 with five empty mine cars attached. We follow the Buchanan set approximately 300 metres behind. As we enter the portal, we pull the switch for the runaway points situated a little further ahead. This road runs into a cut through (tunnel in the coal seam) and is located here to protect the main line from a runaway on the surface. On rounding the bend leading into the long straight, we notice the light indicating the setting of the points has turned green which tells us that the road is set for the mainline. After crossing these points, we pull the switch about 100 metres inbye of the points and look back along our train to see that the light has turned red. It does so, indicating the points have changed and we head off toward the loading points.

We are coasting downhill and drop through the cutting, ambling along effortlessly as the locomotive is on regenerative braking. As we approach the Buttai turnout, we pull the rope attached to the switch which controls this turnout. The light turns from green to red as the locomotive maintains momentum and we know that the points are set for the Buttai turnout off the mainline.

As we head into the Buttai turnout, we look back along our train to check that all the mine cars have negotiated the points safely. Our locomotive exerts little effort as it hauls the train up the slight grade and into the dead end shunt at the top of the Buttai loading point. Our shunter got off at the points and will guide us onto the last of the mine cars in the loading point. We change the points leading into the empty storage side of the loading



Locomotive 57 on the surface with empty Buchanan set of mine cars, October 1983. Author's photo

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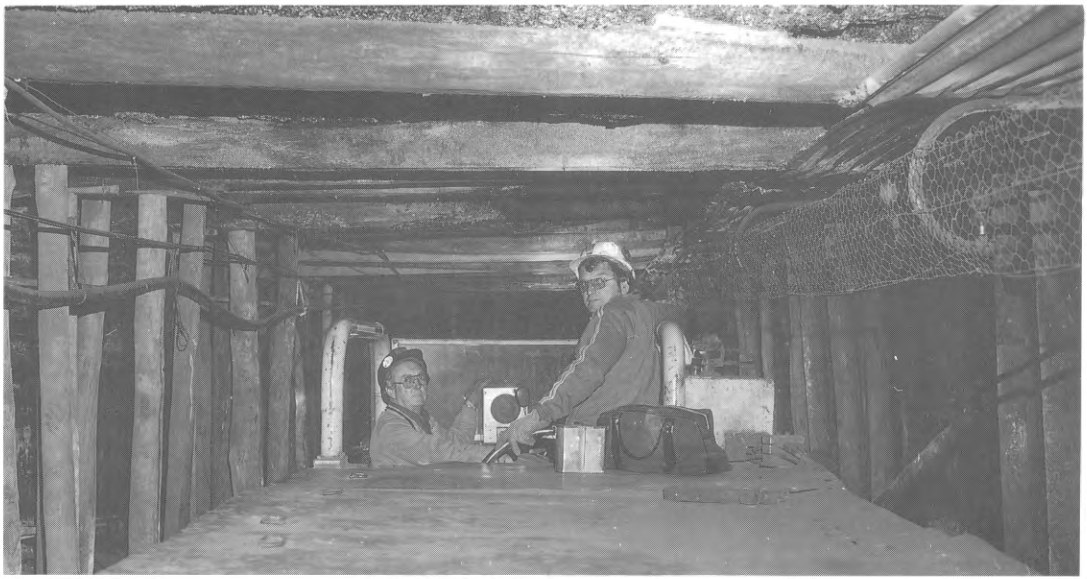

The loco crew check their train as they drop down grade on leaving the Buttai Loading Point, November 1983.
A&C Underground Photographics

point and when the shunter gives the right of way by waving his cap lamp, we push the empty mine cars onto the end of the other cars. As we approach them, the shunter waves his light and we slow until we gently seat the couplings of the mine cars. When this is done, we uncouple to a wave of light from the shunter, and proceed back along our tracks to the full section while the shunter walks through to the full cars.

We climb the steep grade into the full end and attach to the next five cars to be taken out of the mine. Slowly we proceed out of the full section, checking back along the train as we are dropping down a 1 on 10 grade and we need to keep the load in check. We round the sharp curve at the bottom of the grade very slowly so as to not derail and, when this has been done, we pick up speed on the level section leading to the mainline. As we approach the Buttai turnout we contact the crew of the Buchanan set on the two-way radio and find that they are passing though the "cutting". We advise we will follow them back out of the mine. We set the points for our track and charge the grade. After rounding the curve and as we pass the point changing switch, we reset them to the mainline.

Several minutes later, our momentum has gone and No.57 settles down to do what she has done a thousand times before: to conquer the 1 in 21.4 grade and deliver another 60 tons of coal into the surface bin. As we top the grade, we change the runaway points, pass over them, reset them and head towards the portal. Coming into daylight, we round the curve leading to the unloading bin. We pass No.52 at the head and No.55 at the rear of the Buchanan set sitting on the mainline as we enter the loop. No.56 is sitting on the storage road as spare loco for the shift. As we approach the bin, our shunter detrains and starts pulling the doors of the mine cars as we slowly pass over the bin and discharge the coal into the hopper below.

We lift the bananas and, as the dropped mine car doors pass over them, they are automatically lifted and closed. When this has been done, we lower the bananas and push the mine cars back over the bin so as to clear the mainline to enable us to run around to the front of the train. When this is completed, we are ready to proceed into the mine as the Buchanan set left for that location as we started dumping our mine cars. We release the locomotive brakes and slowly move forwards to repeat the working.

The second trip is from the Buchanan loading point on the banking locomotive. After stowing our empties, we return to wait in the turnout from the mainline and, finally, locomotive No.52 with nine full mine cars attached rolls past our location gathering speed for the long hard climb ahead. As soon as the last car has cleared the cross-over, we

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No. 52 (train loco) and No. 55 (banker) at Buchanan Loading Point, November 1983. Author's photo

pull the rope attached to the switch controlling the points and overhead conductors. With this accomplished, we move off as quickly as possible to catch the train which is now some 300 metres ahead. We catch the train and, when the couplings of the last car and our locomotive have seated, we lower the coupling pin into the slot in the coupling. The pin is attached to a piece of wire to facilitate this while the train is moving. With this accomplished we settle down to the long hard climb ahead out of the mine as our momentum has now gone.

The locomotives are now exerting maximum effort to keep the train moving up hill and, as we pass the various crossovers leading to other sections of the mine, our pantograph shoes 'arcs and sparks' momentarily. This is normal and not dangerous in this environment. On approaching the Buttai turnout, we stop our train as we find out over the two-way radio that the Buttai set is returning into the mine. We have to wait about five minutes until this train clears the mainline. Our locomotive crew changes the points and notifies us that we are ready to proceed.

We slowly move forward using sand and pick up a little speed on the short section of 1 in 74/115 grade provided at this location to enable stopped trains to get moving again. As we hit the final section of 1 in 28/22/30 grades, we settle down for the long hard slog up the grade which eventually brings us out into daylight. The train locomotive crew set the necessary points and all we have to do is reset them as we pass. On approaching the dump hopper, the shunter on the train locomotive alights and starts to pull the doors of the mine car. We push the train set over the bin and when the doors have closed on the bananas we are ready to proceed back into the mine.

On our inward trip we will be the train locomotive and the shunter will ride on our unit while No.52 will follow us as 'light engine' about 100 metres to the rear. This locomotive will attach to the next set of full mine cars at the Buchanan loading point as we are stowing the empties. However, before we proceed into the mine, we have to wait for the Buttai set to emerge from the mine as they have radioed us to let us know that they were on their way out.

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Eventually the Buttai set arrives and as it starts dumping its load, we proceed into the mine. After passing the runaway points, there is little work for the locomotive, as it is all downhill to the Buchanan loading point and we travel most of the way on regenerative braking. We check the speed of the train as we approach the various turnouts and after about ten minutes of coasting we approach the loading point. We drop around to the dead-end shunt and our shunter rides the last mine car into the loading point to signal us as we approach the last car in the siding. When the couplings have seated, we return to wait in the turnout off the main while the shunter walks through the loading point to join the train locomotive on the outward trip and the procedure starts again.

Mine Closure

Stockrington No.2 Colliery worked consistently up to early 1987 when it was caught up in the prolonged cost/price squeeze prevailing at the time due to the economic downturn in the NSW coalmining industry. Rationalisation of the colliery's workings was required for survival. Production was cut from 4000 tonnes per day to about 1500 tonnes, with the resultant loss of 65 jobs from 25 September 1987. At the same time, the Richmond Vale Railway ceased operations and coal haulage from the colliery was taken over by motor lorry to both the Port of Newcastle and the Hexham Coal Preparation Plant.

Unfortunately, there was little change in coal prices over the next nine months and redundancy notices were issued to employees during May 1988. The last production shift was worked on 10 June, finishing at 11 am, and the workers finished up on 17 June. A small number of workmen remained to reclaim mining machinery for further use in other collieries.

The reclamation task took some three months. During the last week it was decided to remove the mine cars stored in the underground workings. The first of these were removed on 9 August and the last were brought to the surface one week later. On 17 August, two trolleywire locomotives, Nos 55 and 57, were brought to the surface due to their historical importance. These were donated to the Richmond Main Mining Museum, while the mine cars were stored on the surface for possible use on specialised workings in other collieries. Five were converted to water pumping units and two made into ballast spreading cars for use at the then Coal & Allied owned Liddell Colliery at Ravensworth between December 1988 and March 1989. The remainder were disposed of as scrap during July/August 1989.

The other four trolleywire locomotives were not as fortunate and were left underground. On 19 August 1988, the last workmen to enter the mine

Locomotive 56 arrives at the surface with another load of coal, December 1983. Author's photo

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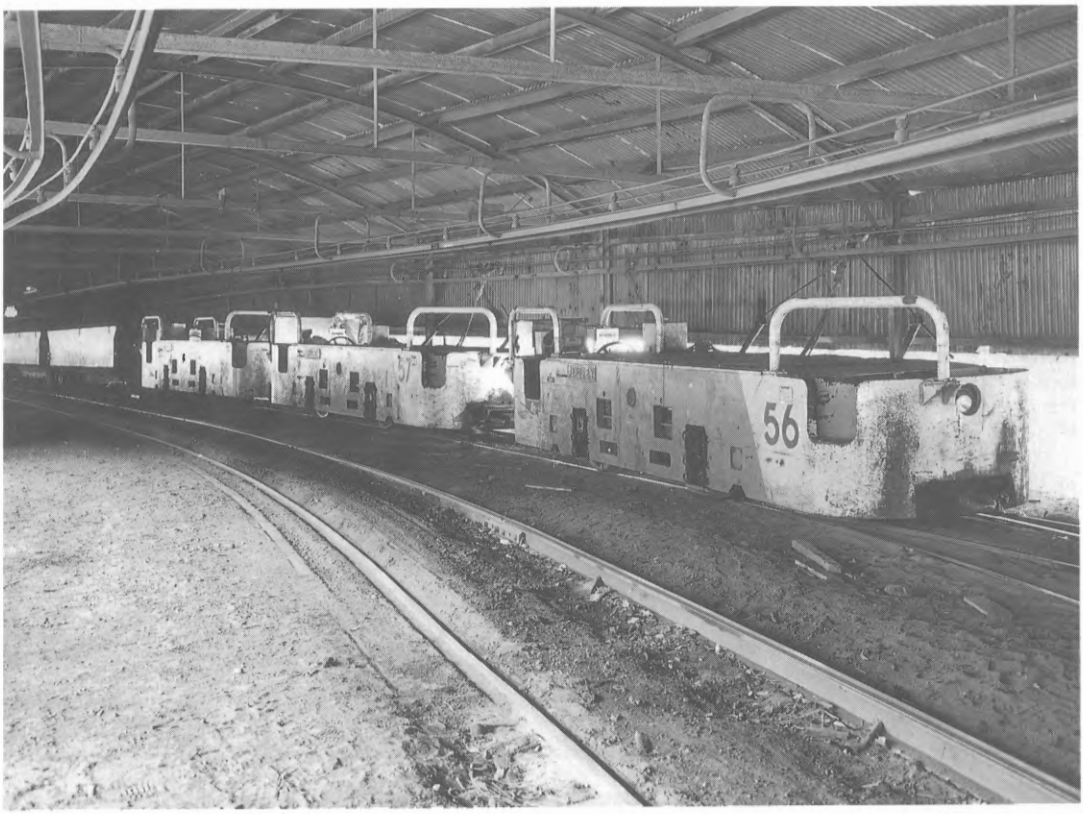

The Stockrington No.2 trolleywire system in its heyday. Locomotives 55, 57 and 56 rest between shifts, keeping the road in the foreground clear for "PC cars" to transport the workers. Author's photo

went in and removed stoppings. All entries to the mine were sealed during the following week.

After sealing operations had been completed, work commenced on demolition of all surface structures, including those remaining at Stockrington No.1 Colliery. These operations took some three months. By December 1988, nothing remained of the Stockrington No.2 Colliery No.3 Tunnel, which had been developed in the early 1950s as the most modern of the then J&A Brown & Abermain Seaham Collieries Group. The last of the "interesting" collieries of the Newcastle district has closed and little remaines of our mining heritage.

Acknowledgements

This article has been compiled from information in official files on the trolleywire system the author collected while employed by Coal & Allied Industries for nearly 20 years. Although some came from employees who worked at the colliery, documented information has taken precedence over the verbal information.

Thanks are extended to the past employees and managers of Stockrington No.2 Colliery and Coal & Allied Industries for their help and assistance in compiling this history of the trolleywire system. Thanks are also due to Mr Patterson, Dresser Industries Inc (Jeffrey Mining) and Mr Martino of the Goodman Equipment Corporation in the United States for supplying drawings of the locomotives and information relevant to the locomotives used in the colliery, and my friend Ed Tonks for supplying photographs of the Goodman locomotives in operation at John Darling Colliery.

Note on the Jeffrey Company: This company changed names several times during the period under review. In the 1950s it was the Jeffrey Manufacturing Company; by 1968 the Jeffrey Mining Machinery Company (a division of the Jeffrey Manufacturing Company); and today, Dresser Inc. Jeffrey Division.

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KOUMALA
by David Mewes

Nerang Hardwood Company

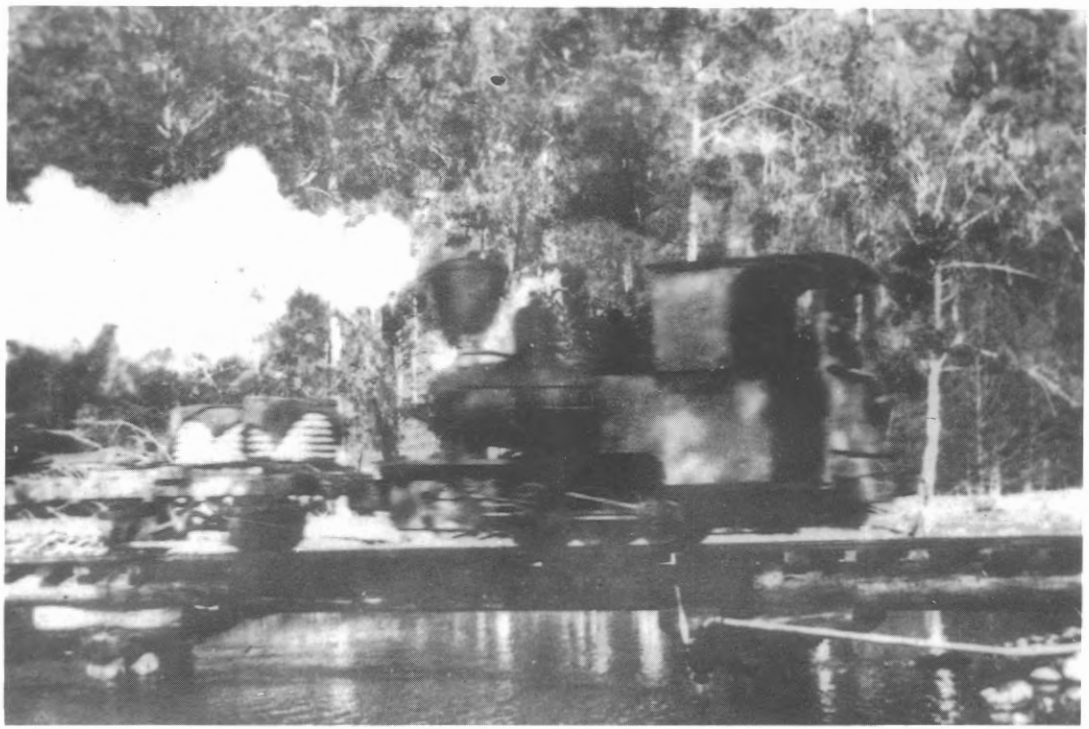
The Nerang Hardwood Company was incorporated in 1923 with the idea of exploiting the timber resources in the Gold Coast hinterland. The company built a sawmill at Neranwood and linked it to Mudgereeba on the Tweed Heads railway line by a 2ft (610 mm) gauge tramline approximately seven miles long. This tramway operated two steam locomotives, one being the well documented *ALLISON*, a John Fowler 0-6-2T (B/n 16194 of 1924), whilst the other is somewhat of a mystery.

The locomotive is question appears to have been an 0-6-0T and was purchased second hand, possibly from South Australia. Since the company was incorporated in 1923 and would have commenced construction of its facilities during that year, it appears that the locomotive may have been purchased then, and certainly no later than 1924. The Machinery Inspector's 1925 report showed the locomotive as a "Koppel" and he considered it to be in "good order".

By 1926, the short lived Nerang Hardwood Company had failed and the two locomotives were stored out of use at Mudgereeba. *ALLISON* was ultimately sold to the Farleigh sugar mill at Mackay in 1931. The "Koppel" locomotive was inspected in June, 1931 on behalf of the Queensland Machinery Company with a further inspection of the boiler to be undertaken when all the tubes had been removed. This work was not done immediately and so, it was not until June 1932 that the boiler inspection was finalised and a repair order on certain defects issued. The Queensland Machinery Co advised that it did not wish to pursue the matter and the locomotive was considered "out of use indefinitely".

Gin Gin Cooperative Sugar Mill

The "Koppel" locomotive came into the ownership of DA Drysdale and LF Ridgeway by January



The "Koppel" locomotive working on the Neranwood tramway. George Bond collection

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1937. Drysdale and Ridgeway had formed a partnership as machinery merchants and they acquired the loco with the aim of overhauling it for resale. Following the overhaul, they searched for a possible buyer, in which task they were not successful until 1939, when it was sold to the Gin Gin Cooperative Sugar Milling Association Limited of Wallaville, where it was first inspected in July of that year. The inspector did not seem much impressed with the machine, listing it as an "old job which had been overhauled by Drysdale & Ridgeway. Last used 1925."

The "Koppel" proved to be not up to the task at Gin Gin and was returned to Drysdale & Ridgeway in August 1939, having lasted at Wallaville only about a month.

Plane Creek Sugar Mill

By February 1940, the locomotive was listed as being owned by the Plane Creek Central Mill Company and was based at Carmilla. Interestingly, the locomotive was now reported as being a "Krauss".

The Carmilla tramway was an isolated line some five miles (8 km) in length connecting with the Queensland Railways at Carmilla, some 30 miles (45 km) south of the Plane Creek mill at Sarina. The locomotive would bring cane into the Carmilla siding and thence it was transferred to Government wagons for forwarding to the mill.

The locomotive appears to have been stationed at Carmilla up until 1950, except for occasional transfers back to the mill for overhaul. In May 1943, for example, the frame and engine unit were inspected at Plane Creek mill while the boiler was inspected at Carmilla and, in May 1945, the whole loco was back at the mill for overhaul.

A new boiler was fitted at the mill in 1950 and the locomotive returned to Koumala, another isolated tramway, about 14 miles (21 km) south of Sarina. From this point until its scrapping, the locomotive is listed under the name *KOUMALA* and was numbered "15A" in the mill roster. *KOUMALA* was shown as being "dismantled and out of use" in October 1957. In May 1958, the locomotive was "permanently out of use" and was scrapped soon after.

Comment

There are no known photographs of the locomotive working at Plane Creek mill and only two of it on the Mudgereeba-Neranwood timber tramway. The fact that it was called a "Koppel" in the early machinery files plus its general appearance suggest that it was an Orenstein & Koppel locomotive. Plane Creek had a number of Krauss locomotives and this would have influenced its description as a "Krauss" at that mill, as builder's plates or other means of identification would probably have been lost during its earlier life.

The "Koppel" locomotive derailed on the Neranwood tramway, c 1923-26.
George Bond collection

There is a suggestion that this locomotive could have been Orenstein & Koppel B/n 3771 of 1909 which, according to the O&K Works List, was dispatched to "Strelitz Bros, Western Australia". Confirmation as to the identity of this locomotive and its earlier history prior to coming into the hands of the Nerang Hardwood Company would help fill another gap of our knowledge of light railways in Australia.

Acknowledgements

The information in this article came from Mackay District Machinery File No. M2932.

I am grateful to Mr Reg Weatherley and Mr Bill Brassington of the Queensland Government Division of Accident Prevention (formerly Division of Occupational Safety) and their staff for their generous cooperation and assistance.

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EARLY AUSTRALIAN ELECTRIC LOCOMOTIVES

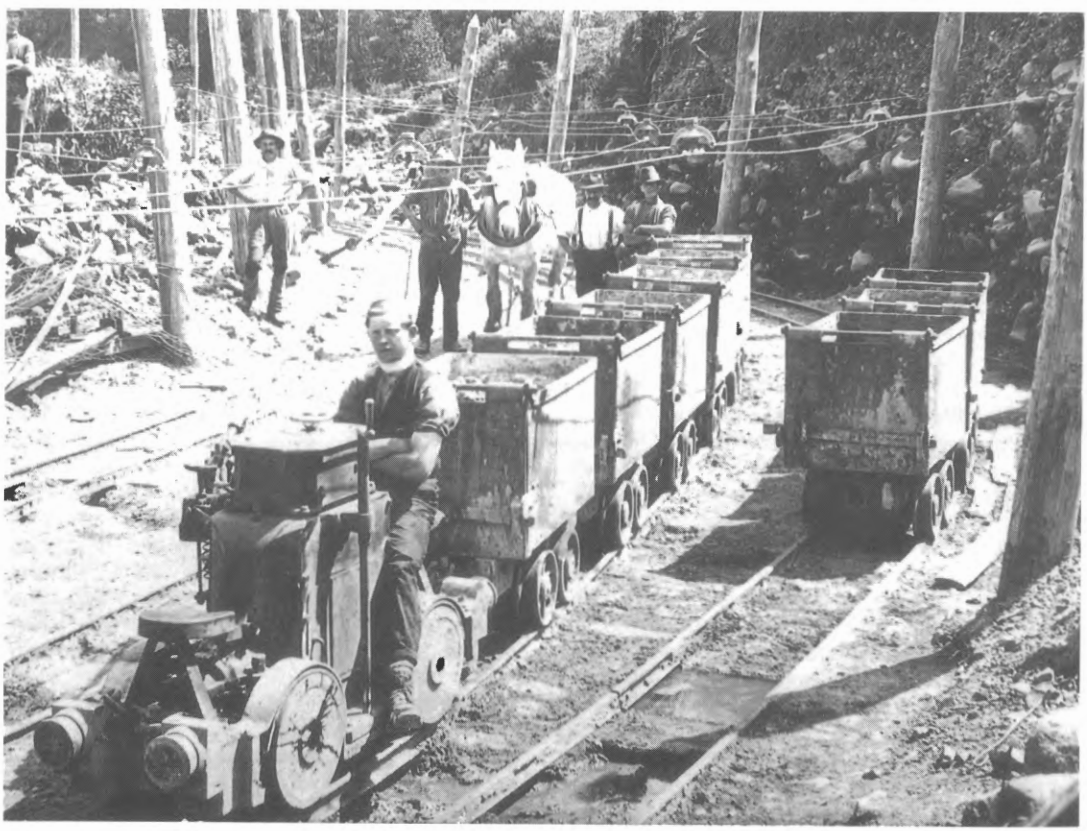
PART 5: MT BISCHOFF UNDERGROUND LOCOMOTIVES

by Lou Rae

The Mount Bischoff Tin Mining Company commenced construction of a wooden tramway system on Tasmania's West Coast in 1875. Iron rails and steam traction were introduced in 1881. In 1905, the Company approved the implementation of a hydro-electric power scheme and with this change of power generation, it also made the decision to convert its steam hauled tramway that ran between the mine and dressing sheds, a distance of one and three quarter miles, to electric traction. This 3ft gauge electrified tramway was commissioned during the final months of 1907 and featured a locomotive manufactured by the Westinghouse Electric Company at the Baldwin Works in America (B/N 27824/1906).

Because the conditions were cramped underground, the Company opted for a smaller gauged electric locomotive to haul the ore to the bins on the surface. Company records show the underground electrification works were commenced in 1908 and completed soon after. The Mining Journal reports as follows:

> "For operating our underground traction we have small electric locomotives manufactured by the Weymouth Proprietary Company of Melbourne. The compactness of these locos adapt them for underground work, and as they have no moving parts exposed and liable to external injuries, the cost of maintenance is very small. Their



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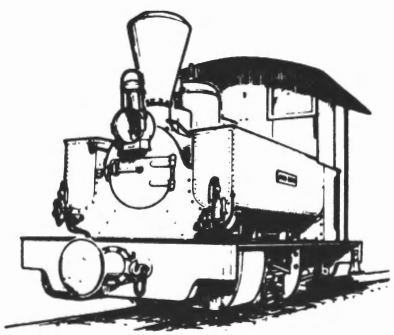
mechanism is of the simplest character, and is easily accessible. Their current is supplied by the 15 h.p. motor generator (induction motor with enclosed auto starter and 12kw. compound wound D.C. generator on the same bedplate and coupled direct) and is collected by the loco by means of a side under-running trolley, designed on the mine."[1]

For eleven years the two locomotives performed the majority of their duties underground in the main tunnel. These locos were also used elsewhere underground and were moved to the different levels on sleds. An external haulage was built especially to convey the two locos up and down between the levels. However, following a double fatality, the underground electric system was replaced by horses. The inquiry, held in 1919, found that the power had been left on and a miner by the name of Thompson, who while walking through the tunnel, had come into contact with the low power cable and was electrocuted. The shift boss, named Walker, went to investigate the accident and was also electrocuted in the process.

Following their removal, the two locomotives were taken to the electricians workshop where they were stored until the workings were closed down and all assets sold soon after the end of the Second World War. Both the locomotives were purchased by a Hobart second-hand scrap dealer and were scrapped at a later date.

References

1. The Mining Journal, 3 September 1910.
Also based on interviews with West Coast identity, Eric Thomas and newspaper articles.



LETTERS

PIT PONIES IN AUSTRALIAN COLLIERIES

On the *Country Wide* program on ABC TV in Sydney for the first week of September 1989, a segment recalled the use of horses in the mining industry, specifically around the Collinsville mines, 92 km south-west of Bowen in Queensland. The feature ran for around 15 minutes and contained some historical footage of the horses hauling tubs of coal and other equipment.

The main reason for the *Country Wide* feature was that two horses, *Mr Edd* and *Warrior*, were to finish their days in the mine, bringing to an end the use of pit ponies in the Australian mining industry, The horses, aged 20 years and 12 years respectively, were put to grass on retirement, while bobcat machines replaced them.

For much of the horses' last years of working life, they only hauled skids of mine supplies and tools, rail haulage having ceased some years ago. Mention was made of how horses got knowledge of what to do automatically and the number of skips they were willing to haul through the tunnels. If more than a set number of skips were tied to the traces, a horse would mostly refuse to begin the haul. The mine disaster of October 1954, when seven men and two horses were killed, was also mentioned.

The men who last handled the horses were named as Wayne Munroe and Brett Selling. They have now been retrained to drive bobcats.

Len King
Five Dock, NSW

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EARLY AUSTRALIAN ELECTRIC LOCOMOTIVES, LR.92, 95, 99, 105:

Receipt of *LR.105*, with Part 4 of the occasional series on Early Australian Electric Locomotives coincided with the arrival of *The Narrow Gauge* No.123 which, coincidentally, included an article by John Manners on electric locomotives built by Bruce Peebles & Co Ltd of Edinburgh. This firm had acquired a licence in 1902 for the sole manufacturing rights in Great Britain, her colonies and Dependencies, under the electrical patents of Messers Grantz & Co, Budapest.

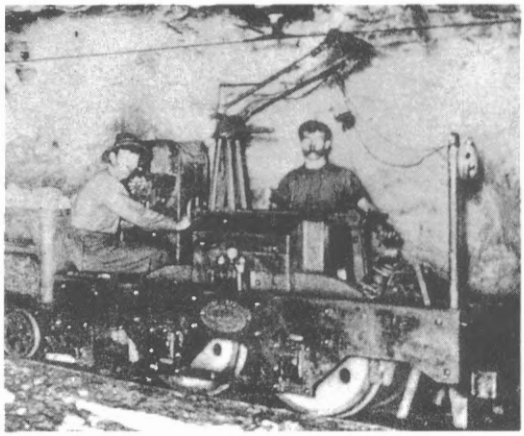
Of interest to LR readers is a small 30 hp four-wheel electric locomotive built for the Ivanhoe Gold Mining Company in 1905-06. The rear cover of *NG.123* shows a superb work's photo of this locomotive which, being three phase, had twin trolley poles. Built to Bruce Peebles General Order No.9272, Works Order No.17945 and Machine No.5019, John Manners shows that there is, in fact, every likelihood that the loco was built by the Brush Electrical Engineering Co Ltd of Loughborough, with Bruce Peebles fitting it with the electrical equipment and motor. John also assumes that the Ivanhoe Gold Mine was the one in Western Australia. I am sure he is correct to do so as I find I have a note in my files of a twin trolley pole locomotive being in use there circa 1905. Although not stated, the gauge was about 2ft, quite possibly the 1ft 8in common in Western Australian gold mines.

The Narrow Gauge is published in the UK by the Narrow Gauge Railway Society and features many articles on industrial railways world-wide, both current and historical. As such, it can be thoroughly recommended to Light Railway readers.

I am also enclosing a photograph of an underground electric locomotive, fitted with a bow collector and used by the BHP Company Ltd at Broken Hill in the early 1900s. Apparently it was unsuccessful and a return was made to the horse traction which it was meant to replace. I wonder if any reader can shed light on the locomotive's builder? Although indistinct in the poor photo, the large builder's plate may be distinctive of a particular firm, as may the large diameter wheels.

Richard Horne
South Croydon, UK

Back cover: Extract from the 1901 catalogue of the Light Inspection Car Coy. Courtesy David Whiteford.



Underground electric locomotive used by BHP Company at Broken Hill in early 1900s.

NORTHERN COALFIELDS, NSW: LR.103

On page 23 of his most interesting article on transportation systems in the Northern Coalfields of NSW, Brian Andrews shows a drawing of a 6-ton mine car of Hebburn No.2 Colliery as typical of those latterly used in the area.

Similar cars were, of course, used in the other coal mining areas of NSW. I have a drawing, dated 1948, from Thirwell & McKenzie Ltd of Port Kembla showing their 6-ton mine car, also of 3ft 6in gauge. Overall dimensions were 12ft 8.5in long x 6ft 6in wide x 4ft high. Compared with the Hebburn cars, the bow to the ends was less pronounced and the champfering to the sides started some 12in higher. The major difference was that the cars could be provided with an open end and had brake gear with a brake handle across the end.

Although indistinct, ordering details are shown on the drawing as follows:
Corrimal cars Nos 15-16, O/No 951
Lithgow Valley cars Nos 1-20, O/No 140
N.O.P cars Nos 51-65, O/No CD 1304

The Corrimal and NPO cars had open ends, while the Lithgow Valley cars were closed. While NPO is the owner's name, I am uncertain as to which colliery this refers. The cars were painted one coat of primer with the outside finished in one coat of orange lacquer, the wheels and brake gear being painted brown. Fleet numbers were stencil welded on one side only in 4in high numerals.

Richard Horne
South Croydon, UK

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