

BYWAYS ⁴ OF STEAM



EVELEIGH PRESS

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BYWAYS OF STEAM 4

On the Railways of New South Wales



Please support the author where possible

Eveleigh Press



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Front Cover: *Synonymous with the South Coast railway for almost all its existence in the steam age was the 32 class 4-6-0, first seen in 1892 and bowing out of regular Illawarra service in the mid 1960s. The P class worked all manner of trains: express, suburban, mixed and goods, combining a reasonable turn of speed with a wide range of availability. One of the principal traffics from beyond the industrial conurbation of Wollongong-Port Kembla was milk from the rich pastures of the Illawarra for the thirsty metropolis. Milk trains were accorded priority, and the main train, No.120 fast milk, was prescribed "to convey milk from Nowra, Berry, Gerringong, Kiama, Albion Park and Dapto. Train is timed at a maximum speed of fifty miles per hour and conveys only bogie vehicles of MLV, MLK, and BMT type and a suitable bogie brake van." Here we see the train on a sunny winter's day, 29 June 1964, climbing the 1 in 44 out of Shellharbour, with 3306 in charge of a good load of MLK and BMT vehicles, trailed by a passenger brake van.* Brian Coker

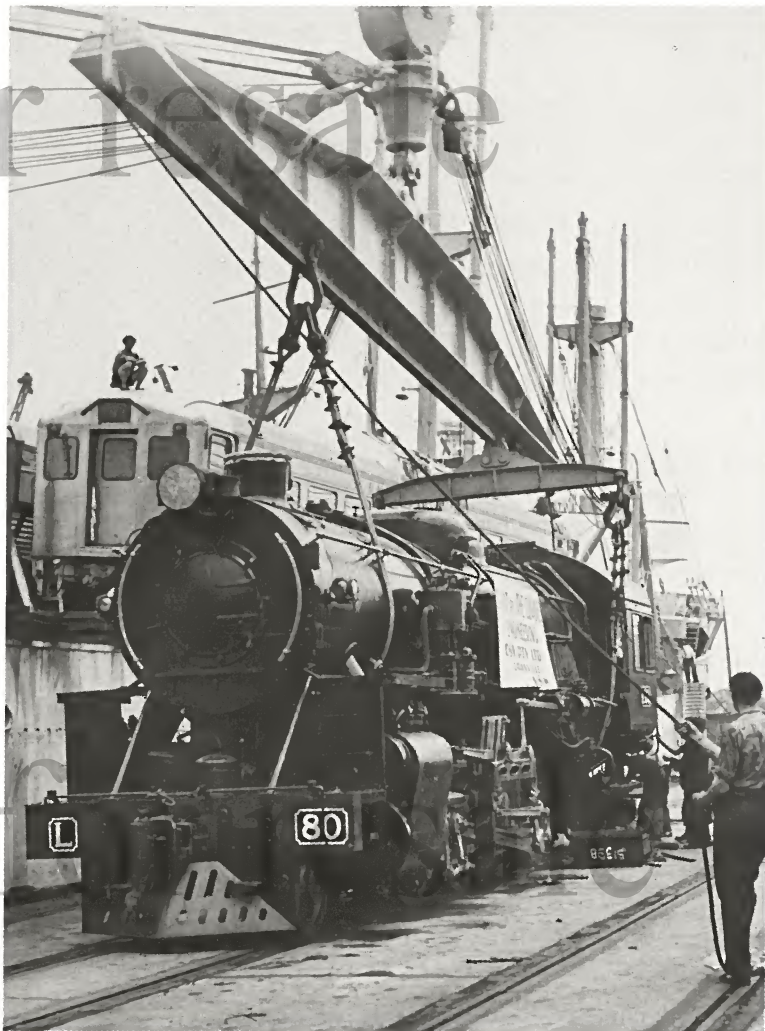
Back Cover, Above: *Passenger services on the Illawarra rarely were accorded celebrity status, and were typified for decades by a 32 class and a set of American suburban cars, commonly referred to as a LUB set. Only the South Coast Daylight Express merited the latest stock, and was allocated a green and cream CUB set in 1935, a green and cream SEB set later, an air-conditioned HUB set in 1949 (later stolen for the Central West Express) and the unique Budd railcars from 1960. The CUB tourist sets infiltrated other workings as they were superseded in top grade work, and 3322 is seen working one on No.96 passenger towards the tunnel at Lilyvale, ready to assault the long and sinuous climb thence to Waterfall, on 2 February 1964.*

Brian Coker

Back Cover, Below: *The last operating branch off the South Maitland Railway's main line was that to Neath loading sidings. Here, although Neath Colliery had ceased working during the Second World War, coal trucked from nearby Aberdare North Colliery was loaded for forwarding to the Newcastle area. SMR's trusty Beyer, Peacock 2-8-2 tank No.20 has eased a long load of archetypal "non-air" hoppers down from the loading sidings to the level crossing at Cessnock Road, Neath, and after waiting for the road from Neath's signalman, is gaining the main line, which is protected by Neath's lovely McKenzie and Holland, lower-quadrant home signal. The fireman in this 1977 scene is watching carefully to ensure that his load makes it safely across the road crossing before resuming his attention to the fire, which will need to be in good shape for Denman Hill, a mile or so down the road at Abermain.*

Ray Love

From the period after the First World War, new steam engine types on the broad gauge, and some on the narrow gauge, too, were designed to be readily convertible to standard gauge. In the event, no engines ever were so converted, but twenty 2-8-2s constructed by Clyde Engineering for the United Nations Relief and Rehabilitation Agency in 1949 came closest. Essentially South Australian Railways' Webb-era 700 class, they were ordered as standard-gauge units for the Chinese Railways. Changed political circumstances during their construction left the Australian government with twenty locomotives for sale. Claimed to be too wide for the NSWGR, the obvious purchaser, they finally found homes on the standard-gauge Trans Australian Railway and the broad-gauge South Australian Railways. Gauge conversion was effected by turning the asymmetrically-bossed wheels "inside out" and making simple changes to the brake rigging; no frame or cylinder alterations were involved. By a cruel twist of fate, the first of the Commonwealth Railways' L class were delivered from Sydney to Port Augusta on the m.v. 'Belbetty', seen here at Darling Harbour, which was bringing CR's three new Budd railcars from Philadelphia and while the Clyde-built GM class diesels were in production. Consequently, L80-L89 scarcely turned a wheel, and rusted away by Spencer Gulf for more than a decade before being scrapped.



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Even with a relatively light load, Enfield engine 5139 is working hard ascending the grade between Cheltenham and Beecroft at the head of No. 251 pick-up goods to Hornsby on Saturday, 1 October 1960.

I. Wallace

Introduction

One of the joys of any substantial railway system is the individuality which certain sections display. In Victoria, the superb engineering of the Bendigo line springs to mind; in South Australia, the Peterborough Division had a life of its own.

In New South Wales, one area in particular maintained an individual character throughout the steam era. Sometimes known as “the Cinderella line”, the Illawarra route, from the Georges River to the Shoalhaven, combined breathtaking scenery, a variety of traffic types, numerous ancillary industrial undertakings, urban and rural landscapes and a wide range of railway types, from heavy main line to country branch, all within a space of eighty miles.

In its northern half, it embodied the NSWGR’s constant search at the end of the last century and the beginning of this for more efficient alignments to replace the abrupt contours of Whitton-era construction. The bold engineering of the Waterfall to Coalcliff section is a testament to the skills of the surveyors and builders, who carved a workable gradient out of deeply indented coastal tracts, so that plodding Standard Goods engines could lift adequate loads of coal from sea level up to the Waterfall plateau. As a largely contour alignment, after three-quarters of a century it enhances the scene in a way no modern high-speed survey, cutting through rather than clinging to the natural features, will ever be able to do.

For passenger and enthusiast alike, the symbol of the South Coast line was a P class at the head of eight or ten American suburban cars, in later times commonly known as LUB sets. Memories of slamming windows shut to maintain the last elements of fresh air as the heaving P plunged into the tunnels, and of hair-raising exploits running down from Waterfall to Sutherland, five-foot driving wheels spinning at impossible speeds, stand out in the mind. While other lines were granted constantly improved rolling stock and accelerated timings, there was really no improvement on “the Coast” until electrification; even the introduction of diesels made no impact, as the 48 class was underpowered for the task it had to perform. The only incursion into the closed world of the P class and American cars was the “South Coast Daylight Express”, firstly with a CUB set in green and cream, then a SEB set, graduating to an air-conditioned HUB set after the war and, finally, to its unique self-propelled set of Budd railcars.

By and large, however, the Illawarra railway was self-contained, with its loco depot at Thirroul, and much of its traffic internal. In such circumstances, individuality in operating practices can thrive, despite the proximity of ‘head office’. Hence, the intricacies of the wharf shunters at Port Kembla, the several private engines which were permitted to meander down the government line, the unique operating practices on the spectacular ‘mountain’ line to Moss Vale, and the vagaries of milk traffic all contributed to a ‘Coast culture’, friendly and relaxed, separated from the too-close scrutiny of officialdom by the formidable Illawarra escarpment, a physical as well as an psychological barrier.

Ian Dunn



The Illawarra is the name given to the narrow strip of coastal lowland commencing at Scarborough and widening southwards to Kiama and Nowra. The Pacific Ocean marks the eastern boundary, while the westward extent terminates abruptly beneath a towering sandstone-capped escarpment. The steep topography is shown well in this photograph of 3651 heading southwards near Wombarra with a special passenger train.

R.K. Booth

Above Right: *The predominant engines handling passenger services on the Illawarra line in steam days were the 32 class 4-6-0s, which were universally called by their pre-1924 classification as the P class. 3324 takes No.96 fast passenger out of Thirroul on 5 February 1960 with Austinmer, Sutherland and Hurstville the only stops before Sydney.*

R.K. Booth



South Coast in Steam

Robert Booth & Ray Love

Thirroul probably seems a strange place today for the location of a locomotive depot and major marshalling yards serving the Illawarra district. However, in 1917, when these facilities became fully operational, the steelworks and associated industry had yet to be established at Port Kembla. Instead, most of the railway freight in the form of coal and coke came from collieries located between Scarborough and Wollongong. These commodities were transported for the local industrial and domestic market in Sydney or for export through Darling Harbour.

The opening of the yards and loco depot at Thirroul was a part of the line duplication works from Waterfall to Wollongong and the associated improvement of grades. Prior to 1917 Waterfall had the locomotive depot serving the Illawarra region. There was also a sub-depot at South Clifton (later Scarborough) where one or two engines, plus crews, were stationed mainly for Bombo blue metal working. Thus, at the time of its establishment, Thirroul was central to the majority of sources of freight

conveyed by the Railways in the district.

The purpose of this article is to review the early railway history in the Illawarra and to deal with the history of Thirroul depot and its associated steam train working. It will make only occasional reference to Eveleigh and Enfield working which Thirroul overlapped.

By the time of the opening of the first section of the Illawarra line to Hurstville on 15 October 1884, the principal main lines of the state's railway system had reached Albury, Byrock and Glen Innes. The Illawarra region, hemmed in by the high plateau escarpment just to the west of the coastline, had its passenger and freight transport needs served by coastal steamer. Small ports had been constructed at Wollongong and Kiama to provide safe anchorage for boats.

A number of collieries already had built their own private railways to nearby jetties for coal shipment before construction of the Illawarra railway had commenced. These berths were open to the sea and unusable when the swell and gale sprang up from

the south-east. These private lines were:

- North Illawarra Coal Company's line running to a jetty at Hicks Point near Austinmer.
- Bulli Coal Company's line running to a jetty at Bulli Point.
- Bellambi Coal Company's line near Woonona running to a jetty at Bellambi Point.
- South Bulli Company's line near Bellambi running to a jetty at Bellambi Point.
- Mt Pleasant Coal and Iron Company's 3'8½" line near North Wollongong running to Wollongong Harbour.
- Osborne Wallsend Coal Company's line near Mt Keira running to Wollongong Harbour.
- Mt Kembla Coal & Oil Company's line near Unanderra running to a jetty at Red Point (later Port Kembla).

Agitation for a railway from Sydney to the Illawarra can be traced back to the 1870s with the object of obtaining a faster and more reliable method of transport for the district's coal, blue metal and dairy products.

Sir Henry Parkes, who had been the Member for Kiama between 1864 and 1870, showed interest in such a railway and, in his capacity as Colonial Secretary and Premier, ordered a survey to be made in 1873. In November of that year, Surveyor R. Stephens reported to John Whitton, Engineer-in-Chief for Railways, that his preliminary investigations had found a practical route between Sydney and Bulli. The Georges River would be crossed at Tom Ugly's Point, followed by a crossing of the present Sutherland-Cronulla peninsula into the valley of the Hacking River. This valley would be followed to Otford. Thereafter, tunnels through Bald Hill and near Clifton would bring the line to the Illawarra proper.

Detailed surveying in 1874 located the proposed route at the Sydney end more precisely and from the outset it was the transport of coal which was seen as the principal motive for the line's construction. This route commenced beside Iron Cove, Rozelle and headed in a southerly direction. The line passed beneath the first arch of the Lewisham viaduct, beyond which a trailing connection with the main line at Petersham would give access to Sydney. After crossing the Cooks River and Wolli Creek, the route headed for Rocky Point at Sans Souci where the Georges River would be crossed. The route proceeded to the Illawarra via the Hacking River valley to Otford and Clifton as before. The Rozelle terminus facilitated the transfer of coal into boats and lighters.

A completely different route from Liverpool to Wollongong was surveyed at the same time. This proposal kept to the top of the escarpment to Bulli where a descent to Wollongong would commence. Having to drop the line 1087 feet in just over 6¾ miles meant an average grade of 1 in 28 or a series of zig zags, neither of which was deemed satisfactory. Such a route would not have pleased the coal interests.

These first surveys put the initial terminus of the

line at Wollongong. The citizens of Kiama agitated for the line to be extended to their district and a survey to that effect was completed in 1876, although the line of railway was first located some distance west of the township of Kiama itself.

However, all this activity was to no avail since, in 1876, Parliament did not approve the construction of the line. In 1880, a further survey yielding the present route to Waterfall and a direct descent to Otford was made. This route, known as the Bottle Forest route, avoided the tortuous Hacking River valley with its numerous creek crossings, but it did require a steep descent using six tunnels from Waterfall to Otford. Whitton had also investigated the possibility of leaving the plateau top near Stanwell Park and using the natural indentation in the coastline there to commence the descent of the line to the Illawarra. The slippery terrain discounted this idea.

In 1881, Parliament approved the line from Sydney to Kiama, a sum of £1,020,000 being provided for its construction. The contract for the first section to Waterfall was let to Messrs C. & E. Millar on 12 September 1882. The letting of contracts for further sections of the line was complicated by the dispute which arose over the location of the line between Como and Otford. Protagonists for the Hacking River route, in particular the coal mining interests, were responsible for construction work of the line being halted at Como until a comparative assessment of the difficulties and costs of the two routes could be made. This required a hurried re-surveying of the Hacking River route involving no fewer than six surveyors, an indication of the urgency the government placed on the matter.

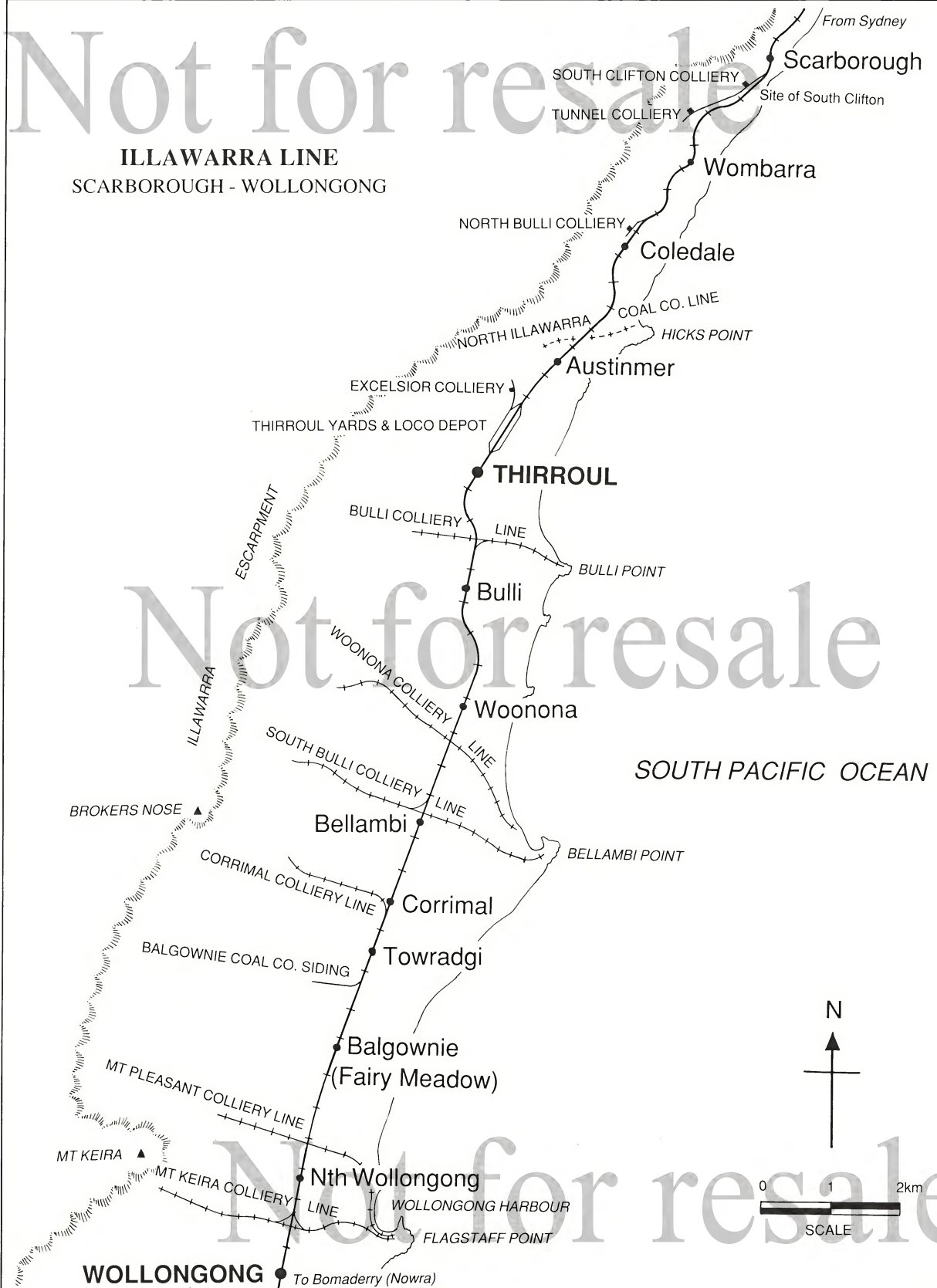
The Engineer-in-Chief, John Whitton, produced a very detailed analysis which clearly showed the Bottle Forest route was preferable and cheaper to build. On 10 October 1883, the Minister for Works decided to adhere to the original plans. The contractors refused to continue with the work and a new contract for the Como-Coalcliff section was let to Messrs Rowe & Smith on 22 July 1884. Millars sought and received financial compensation for the broken contract.

In the meantime, the contract for the Coalcliff to near Albion Park section had already been let on 30 October 1881 to Messrs Proudfoot & Logan. The construction of the last short section from near Albion Park to North Kiama (Bombo) was contracted to Monie & Co. on 27 January 1886, by which time trains were now running to Sutherland. (There is some confusion over the spelling of this last contractor's name. Some references have it as Mooney & Co.)

The Bottle Forest-Hacking River dispute, and the difficulty in constructing the line with its seven tunnels between Waterfall and Coalcliff, meant that the Clifton to Wollongong section was sufficiently ready for opening in 1887. The local populace was anxious to make use of the new railway as soon as possible to avoid having to travel on the local roads churned up more than ever by the railway contractor's vehicles. The Government, therefore,

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ILLAWARRA LINE
SCARBOROUGH - WOLLONGONG



arranged for the 0-6-0 tender engine *Bogan* plus two carriages to be shipped to Wollongong for temporary use on the isolated line. The newly installed steam crane at Wollongong Harbour was put to good use unloading the dismantled engine. The engine was assembled at the waterside for transfer via the Mt Keira Colliery's private coal line to the new Government railway. Apparently, nobody at the time realised that the coal staiths were too low for *Bogan* to pass under, so the engine had to be partially dismantled again to pass the obstacle. This delay meant that the engine wasn't available for the already announced opening day, 21 June 1887. Instead, Proudfoot and Logan, contractors for the Clifton-Wollongong section, provided their construction engine *Gladstone* as a substitute for the occasion. Contractors' wagons, hastily adapted, provided passenger accommodation for the opening ceremony.

The original timetable for the isolated section of the Illawarra line is set out below and shows the first stations and crossing loops.

Robbinsville was changed to Thirroul on 1 November 1891, although a dual nameboard was retained for a while to avoid confusion. Curiously, many written references use the spelling *Robbinsville*, but the accompanying photograph shows *Robbinsville* on the station nameboard. The original station buildings along the line were constructed of timber excepting those at Wollongong which were made of brick. Of interest is Austinmer as a watering station. Records indicate that in 1894 the

pumper was required to pump water into the tank for two hours per day. In 1902, however, the tank and column at Austinmer were transferred to the south end of the platform at Wollongong, which had previously been a watering station up until 1891.

The initial descent of the line between the present Scarborough and Coledale stations had several 1 in 50 grades. Thereafter the grades were no steeper than 1 in 75, and for the greater part much less than that. The 30 foot deep cutting just before Wollongong was planned to be a 132 foot tunnel but the change was made before construction commenced. A brick pier, timber decked bridge was provided instead. This proposed tunnel would have been equal in length to the state's shortest - the Shellharbour tunnel 16 miles down the line.

The Wollongong-North Kiama extension incorporating the remainder of Proudfoot & Logan's contract and the whole of Monie's contract, was opened on 9 November 1887, still before the connection with Sydney was complete. Indeed, the section between Wollongong and the private Mt Kembla colliery line near Unanderra was put in early during construction to facilitate the transport of materials for the Illawarra line's construction and for ballast obtained from Logan's quarry on the colliery line. Stations brought into use with the opening of the North Kiama section were Unanderra, Dapto (crossing loop and ordinary train staff station), Yallah (known as Albion Park for a year), Albion Park (known as Oak Flats for a year), Shellharbour and North Kiama.

An engine shed and turntable were provided at North Kiama. The concrete foundations of these long since removed facilities can be found amongst the scrub near Bombo's up starting signal. Wollongong was provided with a 50' turntable once the missing link between Waterfall and South Clifton was opened, enabling the turntable's components to be transported by rail from Sydney.

Water supplies for engines were obtained from Dapto tank and Minnamurra tank. Dapto tank was located on the piece of ground between the two wooden viaducts across Mullet Creek, one mile north of Dapto station. The tank stood on the down side and was used from 1893 until at least 1907. The Minnamurra tank was located on the up side of the track on the northern approach to the Minnamurra viaduct. It was certainly in use in 1891 since a Weekly Notice of that year required engines to take water here only during daylight hours, since the tank signals would not be lit. Instructions issued in 1894 required water to be pumped for 4½ hours each day. The tank was out of use by 1915 when the water plant was dismantled. This followed the provision of loco watering facilities at Kiama in 1901 when two 9000 gallon tanks were installed.

The Illawarra area was at last linked with Sydney by rail on 3 October 1888 when the Waterfall-Coalcliff section was opened. This was very difficult to construct because of the rugged country and numerous tunnels. Grades here were steep using 1 in 40s against both down and up trains.

First Timetable in the Illawarra

		D am	M am	D pm	M pm
WOLLONGONG	t	7.00	11.00	1.35	4.20
Corrimal	u	7.15	11.15	1.50	4.45
Bulli	t	7.25	11.25	2.00	4.55
Robbinsville	u	7.30	11.30	2.05	5.00
Austinmer W	u	a	a	a	a
CLIFTON	t	7.50	11.50	2.25	5.20
		am	am	pm	pm
CLIFTON	t	8.40	12.30	3.00	6.00
Austinmer W	u	a	a	a	a
Robbinsville	u	8.55	12.45	3.15	6.15
Bulli	t	9.00	12.50	3.20	6.20
Corrimal	u	9.10	1.00	3.30	6.30
WOLLONGONG	t	9.25	1.15	3.45	6.45

D - Daily, Sundays excepted

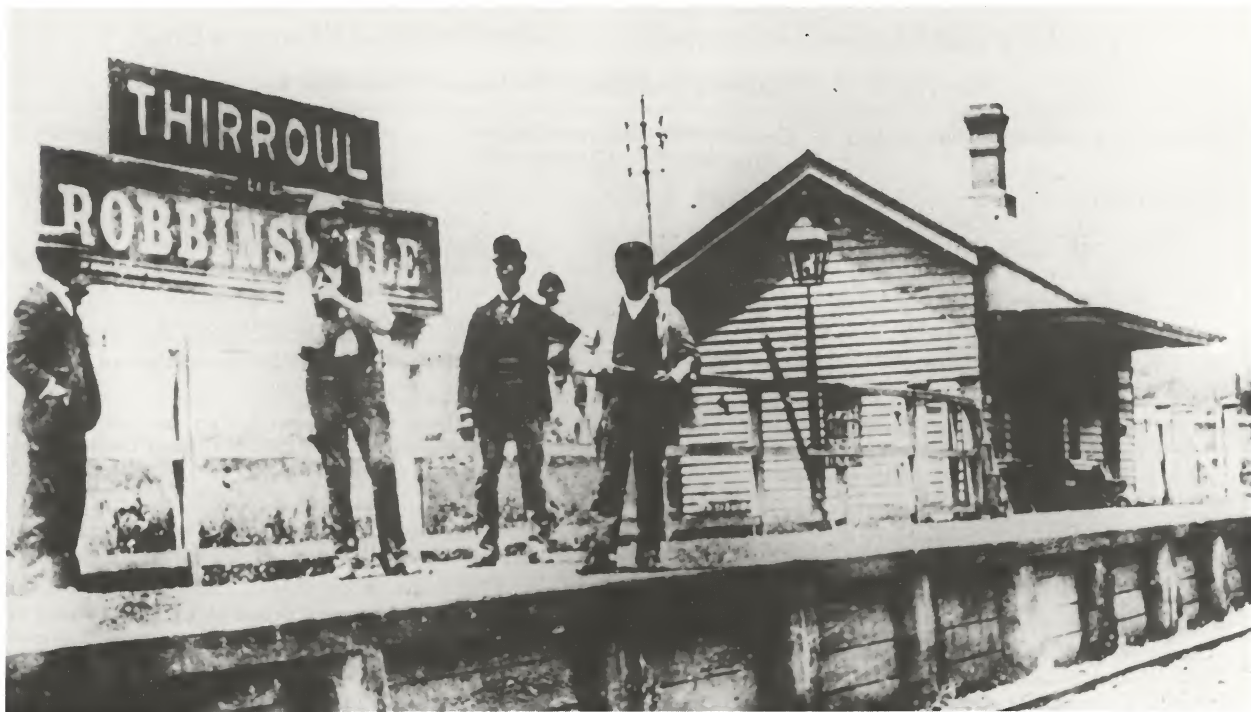
M - Mondays, Wednesdays and Saturdays only

t - staff and ticket station, crossing loop

u - unattended platform

W - loco watering station

a - stops when required



Robbinsville was the original station name for Thirroul. When the name was changed in November 1891, the station was provided temporarily with a dual nameboard. The original nameboard had a baked enamel surface with white letters on a dark blue background. Incidentally, Thirroul is an aboriginal word meaning a valley or hollow.

SRA

Substantial buildings constructed of timber were built at South Clifton and Bulli when the line was opened in 1887. The photograph shows the buildings at South Clifton. These lasted until 1915 when the station location was moved north to make way for regrading and duplication of the line. However, the original building at Bulli still remains. It is hard to imagine that the simple facilities shown here were the staging point for coal and blue metal trains. The sandstone blocks which have tumbled from the escarpment in aeons past indicate the unstable nature of the countryside.

SRA



Colliery and Cokeworks Sidings Connected to the Illawarra Line

Metropolitan Colliery to Mount Pleasant Coke Works

Colliery/Cokeworks	Junction	Connection Opened	Connection Closed	Comments
Metropolitan Colliery	Metropolitan Colliery Junction near Helensburgh	5/12/1890		Still open. Opened as Helensburgh Colliery. Changed to Metropolitan Colliery 20/5/1891. New junction with deviated line 30/5/1915. Coal of renowned quality supplied to NSW Railways and the Navy.
Coalcliff Colliery	Coalcliff	23/9/1910		Still open, although mine closed 1991.
Illawarra Coke Sidings	Coalcliff	12/6/1914		Up side of line. Beehive oven adjacent to main line.
South Clifton Colliery	South Clifton (Scarborough)	1891	1985	Colliery and cokeworks on up side of line. Replaced by New South Clifton Colliery but sidings retained for storage. Finally removed 1985.
New South Clifton Colliery (later Tunnel Colliery)	South Clifton (Scarborough)	1908	1985	Short branch line heading southwards from Scarborough yards.
North Bulli Colliery	Coledale	19/4/1902	1926	Colliery and coke ovens on up side. Closed in 1926 after a large fire destroyed workings and surface buildings.
Excelsior Coke Siding	Coledale	1932	1936	On site of North Bulli coke ovens.
North Illawarra Colliery	North of Austinmer	1891	1912	Trailing connection on down side of line. Colliery line passed under the Illawarra line on its route from the screens to a jetty on Hicks Point.
Kirton's Siding for Excelsior Colliery	Austinmer-Thirroul	1909	1963	For Excelsior Colliery. Originally connected to a loop siding on up side of single track. Connected directly to Thirroul yards when opened in 1917. Coal supplied to Thirroul loco.
Bulli Colliery	Bulli Coal Siding, Bulli	1890		
Model Colliery	Woonona	13/5/1898	1940	Triangular connection down side with Bellambi Coal Company's line from Model Colliery to jetty on Bellambi Point. This line crossed the Illawarra line on the level. Coal haulage ceased in 1903 but line retained to shunt Pendlebury's Brickworks.
BHP Cokeworks	Belona (Woonona - Bellambi)	2/3/1903	1935	Siding on up side. Cokeworks closed 1935.
South Bulli Colliery	Bellambi	17/1/1902	1970s Triangular connection removed early 1980s.	Triangular connection on up side with South Bulli's private line to a jetty at Bellambi Point. This line crossed the Illawarra line on the level.
Corrimal Colliery	Corrimal	11/5/1912		Originally Southern Coal Co., later Corrimal Coal & Coke. Company's engines hauled trains via Illawarra line to Port Kembla wharf or to Bulli wharf which could take larger vessels.
Balgownie Colliery	Near Towradgi	23/11/1911	1936	Siding on up side. Several changes of name. Orielson Siding 1911-1913. Re-opened as Frost's Siding 1922. Balgownie Extended to 1936.
Mt Pleasant Coke Works	Near North Wollongong	24/3/1910	1970s	Siding on down side.

Colliery and Cokeworks Sidings Connected to the Illawarra Line

Mount Pleasant Colliery to Mt Kembla Colliery

Colliery/Cokeworks	Junction	Connection Opened	Connection Closed	Comments
Mt Pleasant Colliery	North Wollongong	30/10/1890	1938	Siding on up side.
Federal Coke Co.	North Wollongong	24/9/1901	1970s	Sidings extended to connect with the private Mt Keira Colliery line so that coal could be taken via the Illawarra line to Cringila in 1940.
Southern Coal Co.	Mt Kembla (1000 yards north of Unanderra)	1889	1917	Colliery line from mine at Mt Kembla to wharf at Red Point, later Port Kembla. Crossed Illawarra line on the level. Mine was a failure and coal from the company's other mine at Corrimall was railed to Port Kembla via this line, a triangular connection with the Illawarra line being laid down for the purpose. Junction controlled by Mt Kembla signal box. The abandoned level crossing of the two lines removed some time after 1904.
Mt Kembla Colliery	Mt Kembla (1000 yards north of Unanderra)	1887	1949	Colliery line from mine near Mt Kembla to wharf at Red Point, later Port Kembla, predates the Illawarra line by 6 years. Triangular connection with Illawarra line on up side. Crossing and connections controlled by Mt Kembla signal box opened on 27/9/1888. Level crossing of lines replaced by an overhead bridge for the colliery line in 1949.

Extension of the line further southwards was intended to reach Nowra and ultimately Jervis Bay. However, rails never did extend into the town proper because of the cost of bridging the Shoalhaven River. The extension to Jervis Bay did not progress beyond the proposal stage since there was little likelihood of the line paying for itself.

The contract to build the line from North Kiama to Bomaderry on the northern bank of the Shoalhaven River was let to Pritchard and Co. and its 21¾ miles included five tunnels and two iron bridges, one across Terralong Street in Kiama and one over the (old) South Coast road at Gerringong. There were numerous wooden trestles across water courses. The line was opened on 2 June 1893 and the terminus was given the dual name of Nowra-Bomaderry. Crossing loops were provided at Kiama and Berry which were safeworking stations using ordinary train staff and ticket. The crossing loop at Kiama was arranged around an island platform. Stations with sidings were opened at Omega, Gerringong, Toolijooa and Jaspers Brush, with the extension to (Bomaderry)-Nowra.

A 50' turntable and a single road engine shed of 108' length were provided at Nowra from the beginning. A 60' turntable was substituted in 1914 for bogie tendered P class engines. A rest house (barracks) was erected in 1925 at Nowra for train crews. In 1897 the turntable and engine shed at North Kiama were re-erected at Kiama.

Once the Illawarra line was opened throughout traffic grew rapidly, especially that originating north of Wollongong. Passengers were served by through and mixed trains. The latter conveyed per-

ishable traffic such as milk, cream and fish. Farm produce and livestock originated from Wollongong and further south. Early engines used on passenger and mixed trains were the principal 4-4-0 types of the C, D and H classes (later 12, 15/16 and 17 classes respectively). Goods loading originating south of Kiama cannot have reached expectations since the safeworking and crossing facilities at Berry were dispensed with in 1895 and not reinstated until 1912.

Much of the heavy freight up until the 1920s was in the form of blue metal, coal and coke. The basalt quarries at Bombo were the principal source of the blue metal traffic. The coal and coke originated from the Wollongong-Scarborough-Helensburgh area where numerous mines were working the Bulli seam of the Illawarra coal measures. The accompanying table lists the various collieries and cokeworks which had sidings or connecting lines off the Illawarra line.

Whereas the early passenger and mixed trains were mostly through workings from Sydney, the coal, coke and blue metal trains of the time originated as local trips. Initially, A and B class engines (later 19 class 0-6-0 and 24/25 class 2-6-0 classes) were used, although there would have been a fair amount of tender-first working on local trips.

This prompted the investigation of building 20 tank engine equivalents of the recently delivered B55 class 2-6-0s (later 24 class) having as many interchangeable parts as possible. The Glasgow locomotive manufacturers, Dubs & Co., who built the B55s, quoted £2600 for side tank engines having 1500 gallons of water and 2 tons of coal capacity, or



It was intended originally that the Illawarra line should reach Nowra, but the cost of bridging the Shoalhaven River caused the Government to baulk. Instead, Bomaderry on the northern bank of the Shoalhaven was made the terminus and was provided with a dual nameboard of Nowra-Bomaderry. The original station building shown here was similar to those built at Gerringong and Berry for the opening of the line in 1893, and suggests that the Bomaderry terminus was to be only temporary. Such turned out not to be the case and a more substantial brick building was only provided to replace the original when it was burnt down. SRA

£2630 for a saddle tank engine with 1600 gallons of water and 3 tons of coal capacity. Since the greater capacities were advisable, the purchase of the saddle tank engines was approved on 24 November 1890. The 20 engines were delivered in 1892 and had a 2-6-2 wheel arrangement. They were classified as the I class, becoming the 26 class after 1924.

Some of the I class were placed immediately on Illawarra working. A Weekly Notice of May 1892 mentions one of the class was stationed at Waterfall instead of Hurstville for bank engine working and for special trips to Metropolitan Colliery, South Clifton and Bulli as traffic demanded. The same notice warns fettlers that the engine would be performing such duties between 4.45am and 9.00pm. The engine returned to Hurstville on Saturdays on completion of work and travelled back to Waterfall on Mondays light attached to a down goods. Hurstville had an engine shed built in 1891 for suburban services.

Waterfall became the engine depot for the local working of coal and blue metal trains about this time but the actual opening date cannot be ascertained. An engine shed was built at Waterfall in

1899.

The I class were involved in highly unusual working on the Illawarra early in their careers. When large consignments of blue metal or coal for shipping purposes were being conveyed to Darling Harbour, the following arrangements were introduced in 1894. Double-headed trains, worked by two I class engines, were to be made up at South Clifton as follows:

- Metal trains consisting of 42 loaded hoppers and 3 19-ton caboose brakevans marshalled - 2 engines, 14 loaded hoppers, brakevan, 14 loaded hoppers, brakevan, 14 loaded hoppers, brakevan (561 tons).
- Coal trains consisting of 30 loaded hoppers and 3 19-ton caboose brakevans marshalled - 2 engines, 10 loaded hoppers, brakevan, 10 loaded hoppers, brakevan, 10 loaded hoppers, brakevan (517 tons).

Each train, on leaving South Clifton, had a Head Guard, Assistant Guard and a Brakesman. The Assistant Guard took the leading brakevan, the Brakesman manned the second brakevan, while the Head Guard, who was in charge of the train, rode



The 26 class 2-6-2 saddle tank engines were specially built to work short-haul mineral trains. Some of the class were placed immediately on Illawarra coal and blue metal trains when introduced into service in 1892. They disappeared from the Illawarra when Thirroul replaced their former depot at Waterfall in 1917. However, the 26s were to return in force in 1949, but were confined to shunting duties in the Port Kembla industrial network. By then most at Port Kembla had acquired an electric headlight plus a steam turbo-generator to provide the necessary current. 2609 fortunately escaped the disfigurement of automatic couplings and needed an S truck as a match wagon for coupling to non-buffered trucks.

R.K. Booth.

the last brakevan.

On arrival at mileage 32m.22ch. (Stanwell Park, then simply a single line and not a safeworking station), the train was divided at the rear of the first brakevan. The two engines took the first portion up the 1 in 40 grade through the Otford tunnel to Otford where it was stowed in the goods siding. These two engines returned to Stanwell Park and brought the second portion of the train to Otford. The two engines then returned to Stanwell Park again and collected the last portion of the train and brought it to Otford. The Head Guard was responsible for the vehicles detached and left standing on the main line at Stanwell Park. He placed detonators on the rails and displayed a red flag 300 yards on the north or Otford side of the train to prevent the risk of the returning engines running into the train. The Assistant Guard and Brakesman went forward with each portion of the train to Otford, returning on the two engines on successive trips back to Stanwell Park. Eight minutes running time was allowed from Stanwell Park to Otford while the returning light engines were allowed five minutes.

At Otford, two portions were marshalled together

for the journey to Waterfall with one brakevan in the middle of the train and one brakevan at the rear. The assisting engine now pushed in the rear from Otford to Waterfall, 30 minutes running time being allowed.

At Waterfall, the train loading was built up to full capacity for the two engines which were now placed at the front. The train still had two caboose brakevans, one in the centre of the train. A stop was made at mileage 19m.40ch. (top of Loftus bank) to pin down the brakes, which were again tightened at a second stop at mileage 15m.40ch. (near Sutherland) before the descent to Como bank.

The front engine was shunted onto the back of the train at Como to give push-up assistance to Hurstville where two separate trains were made up, each to be hauled by a single engine to Eveleigh or Darling Harbour. This complicated working was permitted only during daylight hours. The third portion of the original train left at Otford was brought forward by a special trip using another engine later.

Special precautions had to be taken with the electric tablet for the South Clifton-Otford section

to ensure that the tablet was not placed in the instrument at Otford until all portions of the train had reached Otford complete. A special label with a padlock was handed to the Head Guard by the officer-in-charge at South Clifton. The Head Guard fixed the label on the tablet which he handed to the driver of the second engine, but he kept the key to the padlock in his own possession until the whole train had been taken to Otford. Then the station officer at Otford requested the tablet from the engine crew and the key from the Head Guard so that the tablet would be free to be placed in the instrument there. The station officer at Otford returned the label plus padlock to South Clifton by special parcel.

Should the lifting of the three portion train arrangements from Stanwell Park to Otford delay other conditional traffic, then it was permitted to despatch a two portion train from South Clifton and make only one return trip to Stanwell Park. Each portion had the same composition as before. One loaded four-wheel, blue metal hopper weighed 12 tons and one loaded four-wheel, coal hopper weighed 16 tons.

It is not known for how long this method of working continued before Stanwell Park became a safeworking station and crossing loop in 1901, but it was not the only place on the NSW Railways where loads were divided mid-section because of the presence of locally heavy grades. Of interest is the speed at which traffic was growing on a line which had been opened for seven years, and the half loads only being taken up in the 1 in 40 grade through the 5085 foot Otford tunnel because of the suffocating heat and fumes.

To give some idea of how the goods and mineral traffic on the Illawarra line was growing at the turn of the century, the table opposite lists the trains which were set down to run on Tuesday, 18 March 1901, the preceding Monday being a public holiday.

South Clifton was a second small depot for I class saddle tanks and one was certainly stationed here by 1901. This engine assisted in banking trains to Waterfall, shunted local collieries and worked Bombo blue metal trains. A single track engine shed was built at South Clifton in 1903. The facilities were complete with an ash pit, water column and tank. In the same year a second I class was stationed here to handle additional quantities of blue metal from Bombo. Extra staff in the form of two sets of men (driver and fireman), two head guards and one assistant guard were stationed at South Clifton also.

The 1 in 44 Shellharbour bank and the 1 in 50 grades approaching South Clifton meant that double trips had to be made between Shellharbour and Albion Park and between Bulli and South Clifton to bring forward a full load of 36 wagons. After that, the engine went to Coledale to lift loaded wagons and convey them to South Clifton. Thereafter, the engine was utilised to run a goods as a double engine train to Waterfall.

Referring to the staging of some of the load at

Illawarra Goods Running 1901

DOWN

No.	Time	From	To
3	3.30am	Sydney	Kiama
5	3.20am	Darling Harbour	South Clifton
13	6.10am	Darling Harbour	Metropolitan Colliery
19	7.00am	Darling Harbour	Waterfall
17	8.25am	Waterfall	Bombo
31	9.15am	Darling Harbour	Waterfall
33	10.20am	Eveleigh	Waterfall
47	3.50pm	Waterfall	Metropolitan Colliery
53	6.20pm	Waterfall	South Clifton
63	9.40pm	Darling Harbour	Bulli
57	10.30pm	Darling Harbour	Dapto
203	6.55pm	Eveleigh	Bulli
35	2.13pm	Waterfall	Metropolitan Colliery

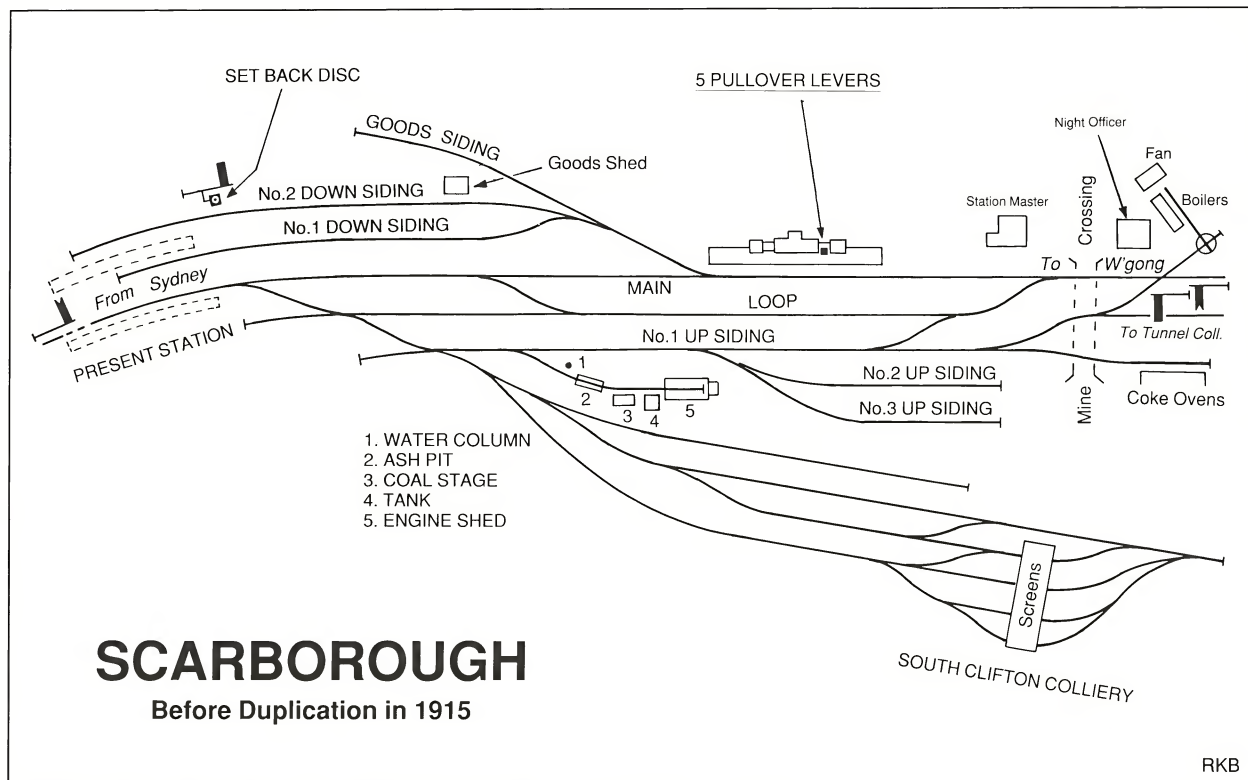
UP

No.	Time	From	To
2	2.05am	Bulli	Darling Harbour
28	8.30am	Kiama	Darling Harbour
32	11.20am	Waterfall	Eveleigh
18	8.10am	South Clifton	Eveleigh
16	9.48am	Metropolitan Colliery	Eveleigh
36	12.50pm	Waterfall	Darling Harbour
48	4.29pm	Metropolitan Colliery	Waterfall
66	6.30pm	Dapto	Darling Harbour
64	8.35pm	South Clifton	Waterfall
102	1.00pm	Bombo	Waterfall
204	11.11pm	Bulli	Eveleigh
34	1.15pm	Metropolitan Colliery	Waterfall
38	3.00pm	Waterfall	Eveleigh

Shellharbour and again at Bulli, a siding was installed at Shellharbour (then not a safeworking station) in 1889, while Bulli had a special staging siding built in addition to its crossing loop and goods siding.

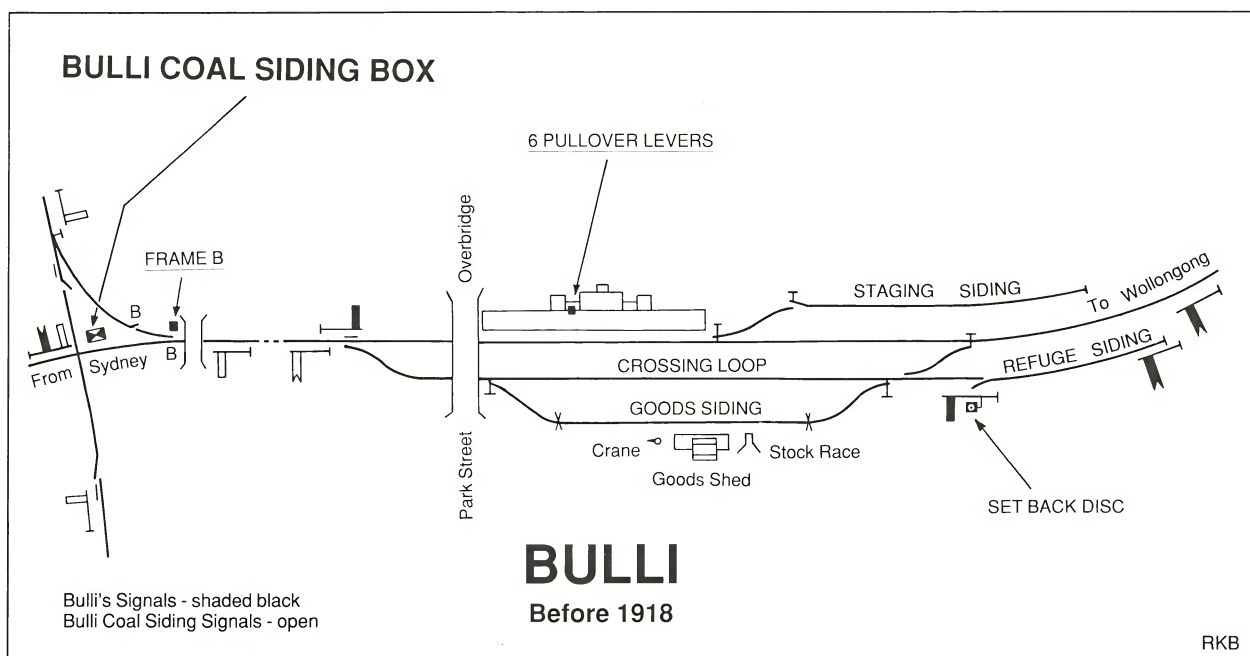
Prior to South Clifton and Waterfall running the Bombo blue metal trains, an engine was stationed for a period at Kiama to run shuttles between Bombo and Wollongong where loading to Sydney was worked forward by another train.

When South Clifton station was renamed Scarborough on 1 October 1903, the depot there assumed the new name also. Besides Bombo blue metal working and bank engine duties to Waterfall,



a Scarborough engine and crew were called upon to handle extra trains. In 1906 the Scarborough engine was used to haul a special train conveying returned exhibits from the Dapto show working to as far as Nowra. In the same year, the Scarborough engine was required for special working associated with the Illawarra District Public School Sports. A Scarborough engine ran an empty car train from

Wollongong to Albion Park and returned, working all stations to Wollongong, picking up competitors and spectators. On the same day, the return of a special train returning sports patrons for stations Para Meadow to Waterfall at the conclusion of the carnival required assistance of the Scarborough bank engine from Bulli to Waterfall. Of particular interest was the instruction that this engine be



fitted with a bogie tender, meaning that Scarborough now had at least one T class (50 class). When the Scarborough bank engine was taken off its normal duties, Waterfall provided a replacement engine and crew.

The rapid growth in traffic is reflected in the improvements in the method of safeworking. When the line was completed in the 1887-1888 period, ordinary train staff and ticket was used. Electric tablet was substituted in the early 1890s. This, in turn, was replaced by electric staff in the 1907-1912 period when tablet instruments were required for additional crossing stations on the main southern line, then working on the electric tablet system.

Crossing loops in addition to those first provided at South Clifton, Bulli, Wollongong, Dapto, North Kiama (closed 1893), Kiama and Berry were opened at Coledale (1906), Thirroul (1912), Corrimall (1904), Albion Park (1891) and Shellharbour (1913). Bombo (formerly North Kiama) did not regain its crossing facilities until 1923 when the present quarry arrangements were opened. A crossing loop was provided at Unanderra in 1924.

Two small duplications of the line were made between Woonona and Bellambi in 1913 (when Bellambi was provided with its island platform) and between Mt Pleasant signal box and Mt Keira signal box in 1913 as well. The purpose of these was to allow shunting of various colliery connections to occur without delaying other traffic. Woonona, Bellambi, Mt Pleasant and Mt Keira used electric staff for the single line sections adjoining them.

Returning to the numerous private colliery line crossings, the Railways protected these from the outset and carried any costs where the colliery line

had prior occupation of the site. An employee operating semaphore signals provided protection at first but the installation of catchpoints, plus the interlocking of these and all signals, was carried out in 1889. These private colliery crossings are detailed in the table below.

The Illawarra line was opened as a double track to Hurstville in 1884 but extended only as a single line further south. Increasing mineral traffic hastened the line's duplication to Waterfall by 1891. Not only did the 1 in 44 Como bank and the 1 in 40 Loftus bank slow the progress of down trains, but also up trains spent time pinning down brakes at Loftus and releasing them again at Como. The 1 in 60 ruling grade against up trains between Como and Hurstville was improved to 1 in 80 by a deviation at Oatley and regrading near Penshurst in 1905. This, coupled with a new well-laid-out marshalling yard at Waterfall, divided the up goods working into two distinct divisions. Waterfall and Scarborough engines were still employed bringing small trains up the 1 in 40s to Waterfall. Here wagons were reassembled into 540 ton loads for movement to Sydney destinations using the modern T class (later 50 class) engines, a number of which were now allocated to Waterfall.

Loads for trains leaving Scarborough for Waterfall were more restricted than would have been caused solely by the steepness of the 1 in 40 grades. The Otford tunnel became notorious very early for the suffocating heat endured by enginemen and loads were halved so that the engine didn't have to work so hard. Less known was a similar problem in the Helensburgh No.4 tunnel south of Helensburgh, where curious wind currents contrived to make the

Private Lines Crossing Illawarra Line on the Level

Private Line	Angle of Crossing	Signal Box	Crossing Opened	Crossing Closed	Comments
Bulli Colliery	86°51'	Bulli Coal Siding	21/6/1887	10/1/1952	Signal box opened 3/10/1888 as North Bulli Crossing. Changed to Bulli Coal Siding 1890. Line pre-dates Illawarra line.
Model Colliery (Woonona)	?	Woonona Crossing	1889	8/10/1940	First signal box 1889; new signal box 1913.
South Bulli (Bellambi)	81°51'	Bellambi	21/6/1887	21/5/1957	First signal box on up side 4/10/1888. Removed to Bellambi platform on down side of single line 8/11/1897. New signal box at end of island platform 1913. Line pre-dates Illawarra line.
Mt Pleasant	81°16'	Mt Pleasant	21/6/1887	1938	Private line had 3'8½" gauge. Interlocked 26/9/1888. New signal box 1913. Line pre-dates Illawarra line.
Mt Keira	89°6'	Mt Keira	21/6/1887	1940	Interlocked 2/10/1888. Line predates the Illawarra line.
Southern Coal Co. (north of Unanderra)	?	Mt Kembla	20/6/1889	1904	Hardly used. Mine a failure.
Mt Kembla (north of Unanderra)	59°33'	Mt Kembla	9/11/1887	23/10/1949	Signal box opened 27/9/1888. Line pre-dates Illawarra line.
Illawarra Harbour & Land Corp.	?	Lake Illawarra Crossing	23/12/1895	17/7/1902	No record of trains ever working over this ill-fated line.

Illawarra Goods Train Loads 1906 (in 9 ton units)

Section	Ruling Grade	Class of Engine								
		C	D	H	L	A, E & K	B	P	I	T
Coledale-Scarborough	1 in 50	18	18	23	24	27	29	30	30	48
Scarborough-Otford	1 in 40	11	11	13	13	18	19	20	20	25
Otford-Cawley	1 in 40	11	11	13	13	18	20	22	22	26
Cawley-Waterfall	1 in 50	18	18	23	23	27	29	30	30	48
Waterfall-Eveleigh	1 in 80	28	28	35	35	37	45	48	48	60
Eveleigh-Darling Harbour	-	37	37	40	40	45	56	60	56	68

atmosphere unbearable. Several drivers had been scalded in this tunnel. Consequently, loads had to be reduced by as much as 30% to avoid excessive steaming through the tunnel. Some idea of the loading problems associated with the working of up goods trains can be gained from the accompanying load table issued in 1906. In those days, loads were given in the number of wagons of general goods (equal to 9 tons) rather than total tonnage.

An attempt was made to improve the atmosphere inside the Otford tunnel in 1908 when a forced-air ventilating system was installed. Double-heading and push-up work was only permitted if the fan was working but loads were still less than those normally allowed for a 1 in 40 grade. However, in 1909 the first step to duplicate the line from Waterfall to Wollongong and to eliminate the worst of the tunnels was put in motion. The Parliamentary Committee on Public Works recommended the construction of a deviated double track line between Waterfall and Otford. The project, which improved the steepest grade to 1 in 80, was completed in 1915.

At the same time, the line between Scarborough and Thirroul was duplicated. Opportunity was taken to improve the step-like 1 in 50 grades between Coledale and Scarborough to a uniform 1 in

75. Scarborough station was moved north to clear the yard sidings. The duplication was extended half a mile south to Bulli Coal Siding in 1916 when Bulli temporarily lost its status as a safeworking station.

Thirroul now came into prominence as an important railway centre. The original single line, with its wooden station building, became the down line, while a new platform with a brick station building was provided for the up line. New goods marshalling sidings were constructed between Austinmer and Thirroul, having three down sidings and five up sidings. All of these sidings were accessible from either end. Long shunting necks were put in at the Austinmer end, from which wagons could be gravitated down a 1 in 150 grade easing to 1 in 400 at the southern extremity. Two elevated block signal boxes, Thirroul North Box and Thirroul South Box, were commissioned in 1917 to control movements into and out of the yards. Thirroul South also controlled movements in and out of the new Thirroul locomotive depot which adjoined the up yard.

Before detailing the development of Thirroul loco, the final duplication of the line to Wollongong needs to be dealt with. Considerable economies were achieved with the 1915 Waterfall-Otford deviation. The difficult working was now restricted to the two mile section between Stanwell Park and Otford via the Otford tunnel. Traffic simply outgrew the capacity of the line. Goods traffic in particular was experiencing lengthy delays, especially when southerly winds competed with the ventilation fan. A 20% load reduction to goods trains was then instituted. Goods trains shunted a part of their load into sidings at Stanwell Park and made two trips to Otford before proceeding with the complete train further north.

Some statistics taken from the 1915 Parliamentary Standing Committee on Public Works report, recommending a deviation of the Illawarra line between Otford and Clifton, bear the point out.

"During August 1913, 69,942 tons were hauled on the down journey, and 179,831 tons on the up journey between Waterfall and Scarborough, and required 330 down and 384 up trains to deal with it. In addition, there were 29 light engines from Waterfall to Scarborough, owing to the preponderance of traffic on the up journey, and also 323 trips between Stanwell Park and Otford consequent on the steep rising grade and long intervening tunnel necessitating heavy up goods trains

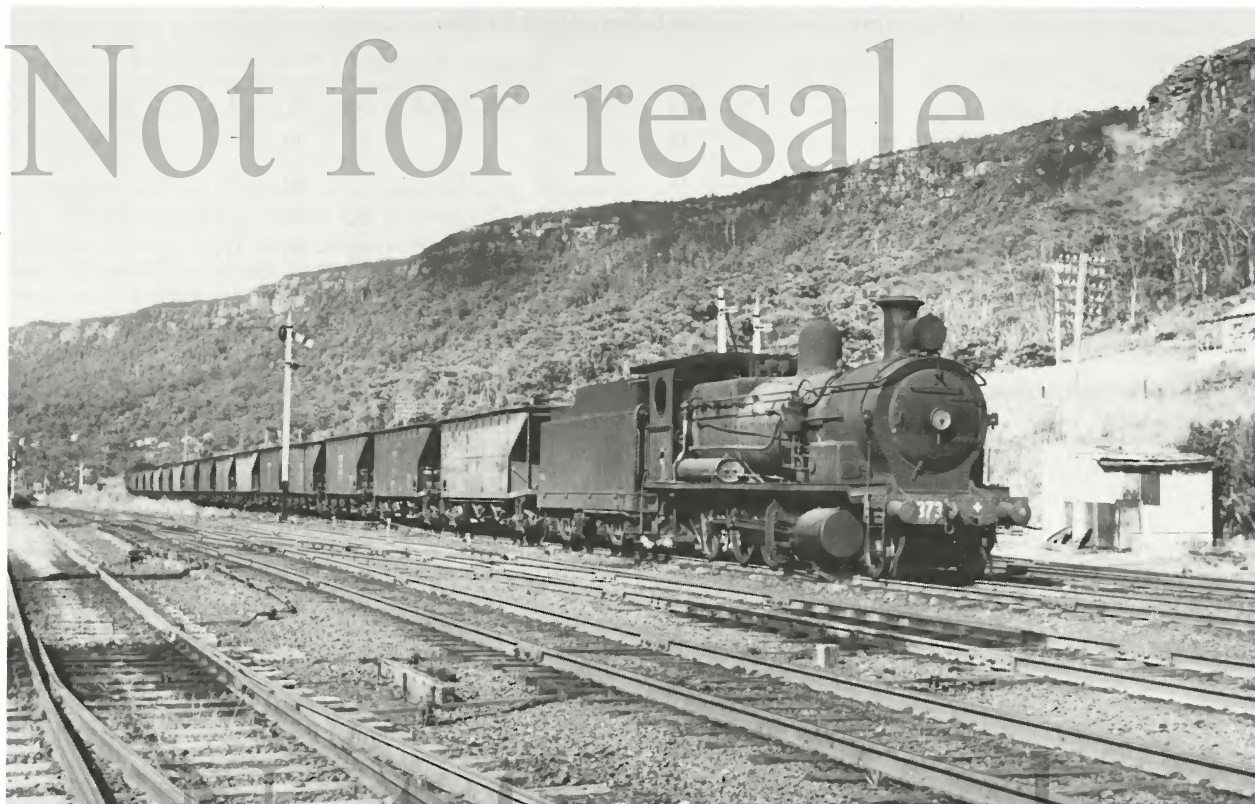
Classification of Engines

Before 1924	After 1924	Wheel Arrangement	Usual Duties 1906
A	19	0-6-0	Goods
B	24, 25	2-6-0	Goods
C	12	4-4-0	Passenger, mixed
D	15, 16	4-4-0	Passenger, mixed
E	20	2-6-4T‡	Minerals
H	17	4-4-0	Passenger, mixed
I	26	2-6-2T‡	Minerals
K	*	2-6-0	Goods, mixed
L	21, 22	2-6-0	Passenger, mixed
P	32	4-6-0	Passenger
T	50	2-8-0	Goods

* = All withdrawn before 1924

‡ = Tank engine

Not for resale



5373 waits in Scarborough's up refuge siding with an empty coal train for Coalcliff Colliery. The train occupies the approximate position of the original South Clifton yards and engine shed. R.K. Booth

Above Right: *The Otford tunnel soon became notorious for the appalling conditions endured by enginemen and for the discomfort to passengers. Soon after its opening in 1887, loads which could be taken through the tunnel were reduced substantially so that engines did not have to steam so hard. In 1908 an attempt was made to improve the atmosphere inside the tunnel by the construction of a forced ventilation plant which, under ideal conditions, provided a 15 knot breeze along the tunnel walls. The ventilation plant was located at the Otford end of the tunnel and this photograph shows the fluming which directed the air from the fan to the tunnel entrance. Double-heading of goods trains was then permitted, provided a southerly wind did not blow since this tended to compete with the fan. SRA.*

Below Right: *The original single line from Waterfall to Otford made a fairly direct descent using 1 in 40 and 1 in 50 grades. The section included six tunnels. This scene shows the original Metropolitan Colliery Junction and the southern portal of Helensburgh No.4 tunnel south of Helendburgh. This tunnel, too, gained notoriety when enginemen were scalded while working through it with a heavy goods train. As a consequence, goods train loads also had to be reduced for this tunnel. Note the 1880s style signal box and the tubular point rodding. The catchpoint indicator is a McKenzie & Holland revolving lamp type, with discs attached to the lampcase. This section of line was abandoned when the Helensburgh deviation was opened in 1915. SRA*

being divided and taken in two portions."

The proposed deviation graded at 1 in 80 at the most would have required only 261 goods trains on the down and 291 on the up. 30 light engine movements would have been necessary to balance down and up trains. Of course, local bank engines would be no longer required.

The deviation between Otford and Coalcliff was sufficiently ready on 3 October 1920 for up goods trains only to commence running and to avoid the delays and horrors of the Otford tunnel as soon as possible. Both up and down tracks were brought into use for all traffic a week later on 10 October

1920. The deviation included three tunnels but, having double tracks laid on easy grades, there were no problems from heat and fumes. The deviation required the construction of a spectacular curved brick viaduct having eight 50 foot arches and standing 112 feet above the bed of Stanwell Creek, the largest brick viaduct in the country.

Duplication of the line southwards from Bulli Coal Siding to Wollongong was delayed by World War I, but it was finally completed in 1923. The single line Clifton tunnel, however, has remained. The easy grades have meant that train occupancy times are short and delays minimal. This tunnel, on





The improvements made to the Illawarra line in the 1915-1920 period included some versatile track arrangements for shunting coal trains and Scarborough, shown here, was a notable example. The empty coal train with 5490 in charge is proceeding north to Metropolitan Colliery, after having collected the single line staff for the section to Coalcliff. The first vehicle of the train is a water tank for replenishing fettlers' lineside storages. The yards in the right background served South Clifton Colliery and South Clifton Tunnel Colliery. January 1963.

R.K. Booth

Above Right: *The left hand platform serving the present down line was the first built at Thirroul. When duplication of the line was opened, the additional track became the up line and a standard brick station building of the period was provided on the new platform. The waiting passengers watch 3230 arrive from Nowra with No.96 Fast Passenger to Sydney on 4 January 1964.*

P.C. Booth

Below Right: *5434 accelerates a local passenger train out of Austinmer on a Port Kembla run. The tracks beside the two main lines are the shunting necks for Thirroul yards. Thirroul North signal box's up starting signal with a lower shunt-ahead arm can be discerned above the second carriage. 5 January 1965.*

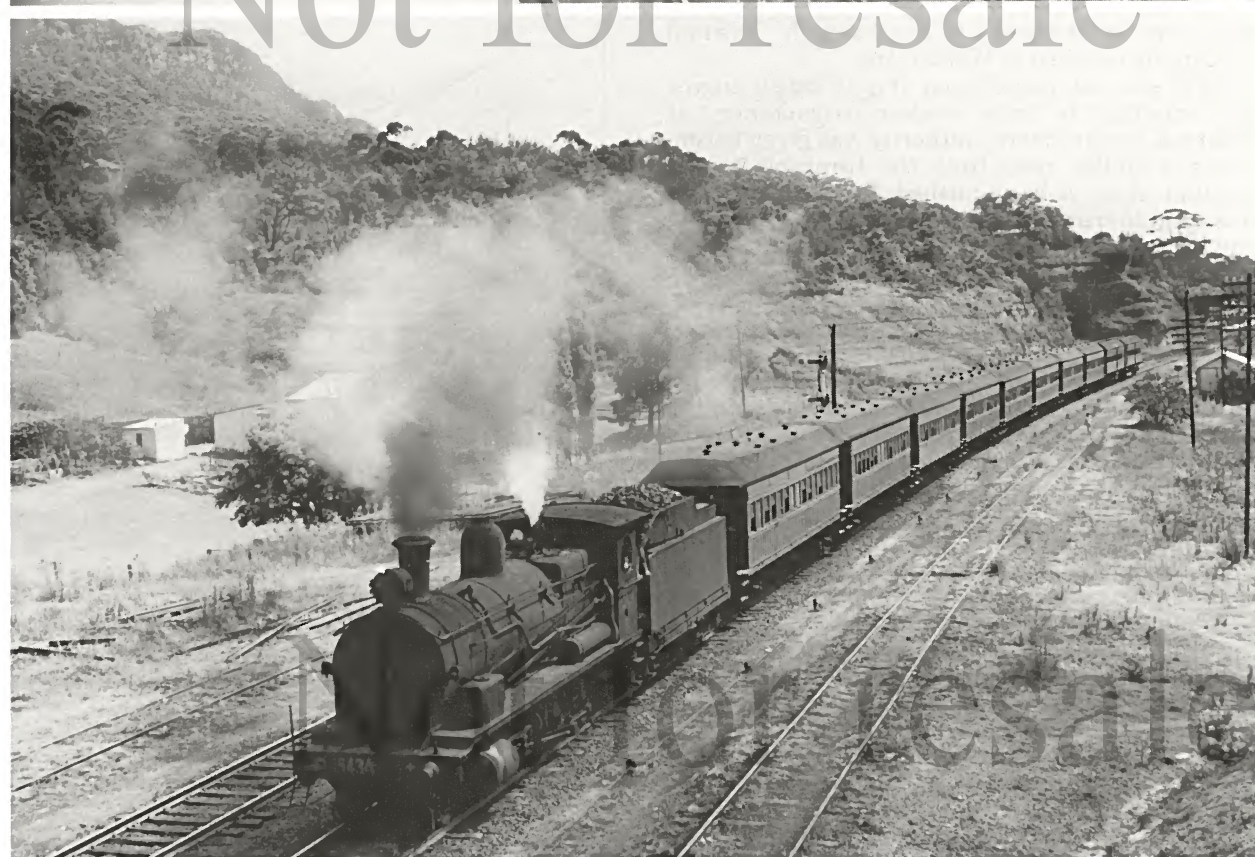
R.K. Booth

the other hand, has given trouble to civil engineers since it was built. Ground creep is having a gradual twisting effect, causing the brick lining to fracture.

The safeworking introduced on the double line between Scarborough and Wollongong was block telegraph using NSW standard block instruments. Block signal boxes were established at Scarborough, Coledale, Thirroul North, Thirroul South, Bulli, Woonona Colliery Crossing, Bellambi, Corrimal, Balgownie (later called Fairy Meadow), Mount Pleasant, Mt Keira and Wollongong. Track block safeworking operated on the main lines between Thirroul North and Thirroul South signal boxes.

The signal box at Bulli Coal Siding was now opened only when required, in which case the signalman obtained an electric release from Bulli. The Woonona Colliery Crossing signal box was closed in 1940 when the crossing was removed. Mt Keira signal box was moved to a new site at Gipps Street level crossing in 1951 when the road crossing was protected with boom gates. Track block was then introduced between Mt Keira and Wollongong. The original yards at Wollongong were remodelled and enlarged in 1923 with the opening of the double track from the north.

The inadequate loco facilities at Waterfall and



Scarborough motivated the planning of a well-appointed depot at Thirroul. Work commenced in 1915 when cottages located on the site of the proposed depot were resumed and removed for re-erection elsewhere. In 1916 Parliament authorised expenditure for the clearing of the site and the building of the engine shed plus ancillary works, including a 75' turntable, loco sidings, ash pits, drop pits inside the shed, an elevated coal bunker with trestle approach, a 40,000 gallon water tank, and a crew rest house (barracks). Also authorised was the provision of a hot water boiler wash-out plant costing £4450, but for unknown reasons it never materialised, resulting in the Chief Commissioner rescinding the order in 1921. Again in 1916, drawings were issued for the arrangements of machinery in the depot.

Thirroul depot was opened on 28 February 1917, although there had been insufficient time to complete all works including the roundhouse and the elevated coal stage. The opening of Thirroul marshalling yards that year and improvements to the line further north meant that it was now advantageous to work engines out of Thirroul, rather than from Scarborough or Waterfall. At first, only three roads were available. In the depot numbering system, Thirroul took over Waterfall's old number of 21, which was displayed as a small elliptical cabside plate cast in either iron or brass.

The late Joe Dargan was one of the first engineers to sign on at Thirroul. The first loco serviced was a T class driven by Don Walker, whose fireman was 'Scotty' Snedden. Joe Dargan started at Waterfall, transferred thence to Scarborough, Thirroul and finally finished at Wollongong.

1917 saw the installation of a 10 hp oil engine plus shafting to drive workshop machinery at Thirroul. Furthermore, authority was given to construct a trolley road from the turntable to the machine shop. A hand-pushed, flat-topped trolley was used to transfer stores between the loco depot and the traffic yard. Successive additions to the loco facilities were:

- Offices and buildings for the depot staff (approved 1918).
- Gangway on the elevated coal bunker (approved 1918).
- Coal spraying and fire fighting services on the coal stage (installed 1920).
- Jacking strips beside the servicing pits in the depot - these were concrete pads designed to bear the heavy weight of an engine when being lifted by jacks (installed 1925).
- 100,000 gallon reservoir (provided 1927).
- 90' electrically operated turntable replacing the original 75' one to turn 57 class engines. This turntable was one of four specially manufactured to turn the 57s. The others were located at Goulburn, Lithgow and No.1 roundhouse, Enfield.
- Overhead sanding service for filling the sandboxes of engines (1929). This was needed especially for the 57 class engines.
- Length of certain pits in the roundhouse in-

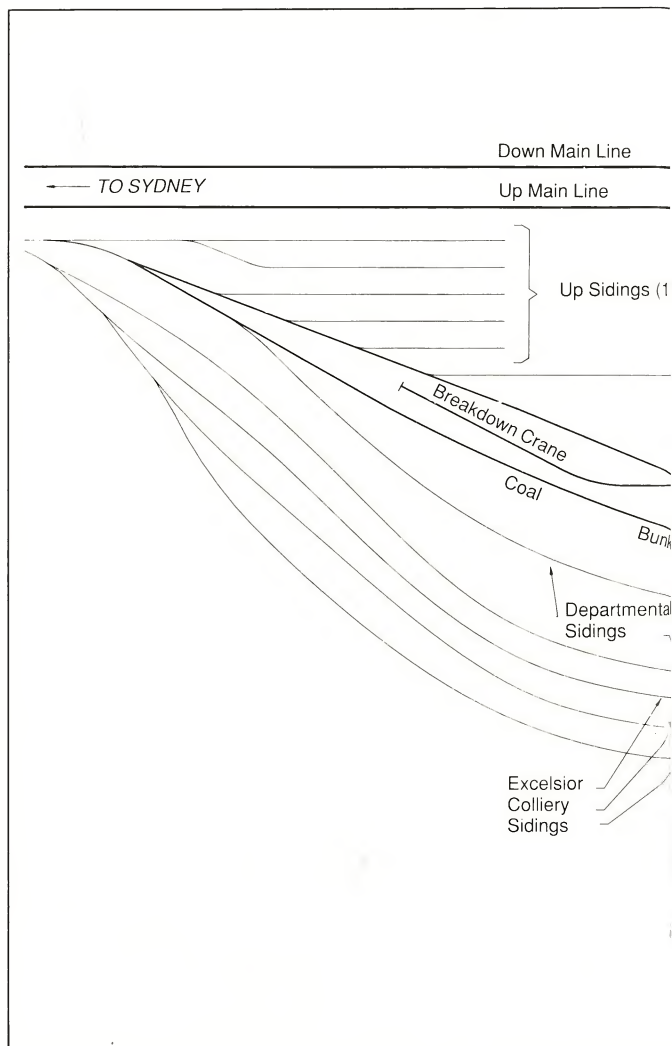
creased in 1930, again for the 57s.

- Drawings issued for the provision of air reservoirs to be mounted on the turntable to permit the use of stored air to move the turntable if there was a loss of electricity supply (1932).
- Erection of an additional 75 ton sand storage bin (1943).
- Provision of tool store which had been a bicycle shed formerly at Kingsgrove.

By the 1950s, when Thirroul was at its maximum development, the depot consisted of an 18 road sector roundhouse constructed around an electrically operated 90' turntable. Eight additional uncovered storage roads radiated off the turntable on the northern or Sydney side. Access to and egress from the roundhouse was by means of the engine arrival

Right: This view taken from Thirroul South signal box shows the up and down yards on either side of the two main lines. The photograph appears to have been taken not long after the opening of the yards in 1917, since the loco coal stage has yet to be built.

SRA

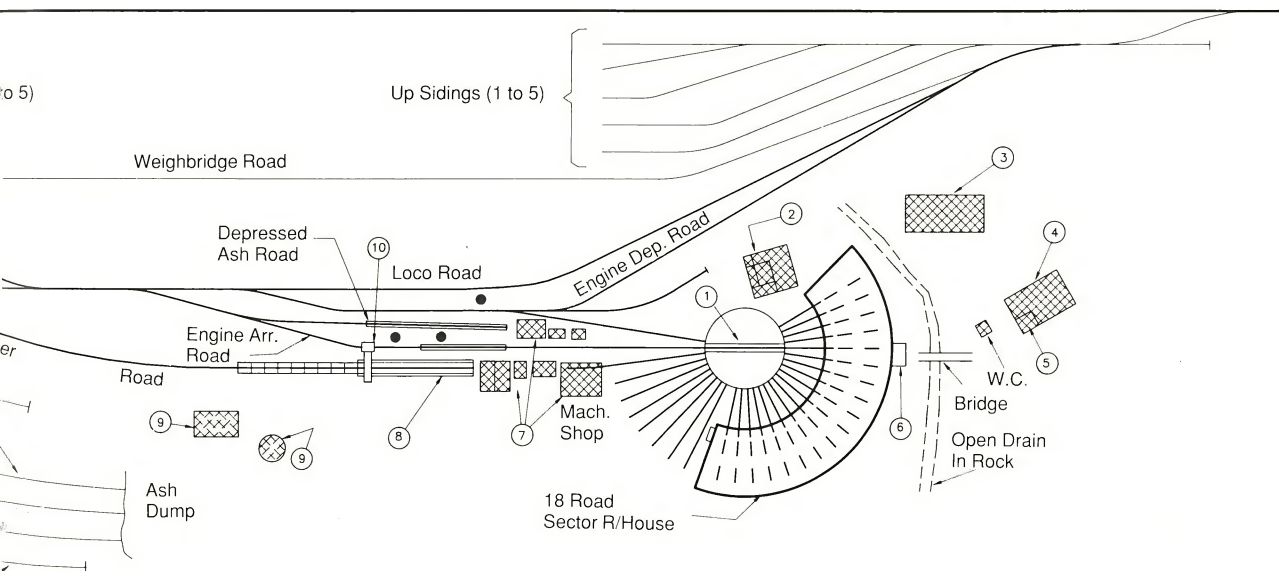




THIRROUL LOCOMOTIVE DEPOT 1938

NOTE: This diagram is based on the drawing of the depot at its maximum development in the steam era. Various tracks and buildings have been added as per photographs and observations.

TO NOWRA →



Key to Symbols

- | | |
|------------------------------------|---|
| 1. 90' dia. electric turntable | 7. Fitters, Boilermaker and Store, etc. |
| 2. Roster Clerk, Chargeman, D.L.E. | 8. Elevated Coal Bunker |
| 3. Temp. Dwellings for Men on Loan | 9. Water Tanks (on hill behind Coal Bunker) |
| 4. Barracks, 6 Bedrooms | 10. Overhead Sand Bin and Chute |
| 5. Shower Room | — Ash Pit |
| 6. Meal Room | ● Water Column |



5354 hurries a southbound local passenger train past Thirroul North signal box on 4 January 1964. Thirroul North box controlled the northern entrance to Thirroul yards. The buildings on the left are a part of Kirton's Excelsior Colliery.
R.K. Booth

Above Right: The loads which could be conveyed to Sydney from the Illawarra were severely restricted by those which could be taken through the Otford tunnel. As the work on the Stanwell Park deviation neared completion, the up line was opened first so that goods trains could avoid the old tunnel. The first goods train to pass over the deviation was hauled by a saturated T class (50 class) on 3 August 1920. Driver McQueen, fireman C. Paynter and guard E. Frose, all of Thirroul depot, crewed the train, which is shown crossing the Stanwell Park viaduct. Note the short-lived practice of using fish-tailed arms on upper quadrant distant signals.
SRA.

Below Right: The Illawarra line was opened as a double track to Hurstville but only as a single track beyond. By 1923 duplication of the line had reached Wollongong. However, the section between Coalcliff and Scarborough remained a single line because of the Clifton tunnel which was too expensive to replace. 3140 heads a Coalcliff local train comprising LUB set 58 onto the single line section at Scarborough in January 1963.
R.K. Booth

and engine departure roads respectively.

The roundhouse building had a sawtooth profile with corrugated fibro cladding on a steel and timber framework. An early photograph shows the outer walls of the shed to be clad originally with weather boards. Minor repairs were made to the roundhouse in 1928 and it was possibly then that fibro replaced the weather boards. Alternatively, the fibro cladding may have been added in 1940 when it is definitely known that the shed was re-roofed with corrugated fibro sheet. Each road inside the shed was provided with a smokechute attached to a chimney in the roof and the chimneys were located towards the outer perimeter wall of the shed. Thus, engines usually faced the outer wall when stabled inside the shed.

A separate timber building having a gabled roof and a verandah contained the offices of the District Locomotive Engineer, Chargeman and Roster

Clerk. This building was located between the roundhouse and the engine departure road and served as a sign-on room also.

The crew barracks, consisting of six bedrooms plus a shower/washroom, were located south of the main shed. Access between the barracks and the loco shed was provided by a small bridge crossing an open stormwater drain running between the two buildings. The barracks were used by train crews working into Thirroul from other depots. Other buildings in the depot precincts were:

- Oil store
- Tool and equipment stores
- Sheds for fitters and boilermakers
- Machine shop.

These functional buildings, clad in corrugated galvanised iron, were located between the roundhouse and the coal stage and were sited on either side of the engine arrival road.





The elevated coal stage was a good vantage point to see the depot arrangements at Thirroul. In the left foreground can be seen the engine arrival road with the ash disposal arrangements. A water hose to quench the ashes lies in the pit while rakes, pricker and fire lifting shovels are scattered about. Ash was taken away in wooden D trucks shunted into the depressed ash road. The various buildings house the tradesmen and stores. A 50 class has just taken water on the loco departure road, while another awaits its turn on the turntable.

SRA

Above Right: *This photograph taken on 4 April 1919 shows the roundhouse at Thirroul two years after the depot opened. A TF class (later 53 class) engine stands on the 75' turntable first installed at Thirroul. The engine has a cast iron smokebox door which was secured by lugs rather than a centre dart. The District Locomotive Engineer's office is on the left and the breakdown train, which includes a former Mountain radial car, is stowed just in front. The square container standing on short piers stored the oil-soaked wood shavings used for lighting up engines. The wooden bodied wagons in the foreground are for the conveyance of ash.*

SRA

Below Right: *When the 57 class commenced working to Thirroul in 1929 an electrically driven 90' turntable had to be installed and this is shown to advantage here. Note the air reservoirs attached to the side of the turntable enabling operation should the electricity supply fail. The tender engines which can be discerned in the shadows are all Standard Goods types, while two 30 class tank engines are stabled partly outside the shed.*

SRA

Engine servicing facilities consisted of an elevated coal bunker 114 feet long and constructed of hardwood. Coal was supplied to the bin from coal hopper wagons such as LCHs propelled to the top of the bunker by the yard shunting engine. The steeply inclined coal bunker road connected with the up yard almost opposite Thirroul North box. Much of

this road were on an embankment but the last 220 feet were on a wooden trestle. Engines were re-coaled by gravity-fed chutes on the engine arrival road. South Coast coal was used quite understandably, Kirton's Excelsior Colliery nearby being a main source. Coal from Metropolitan Colliery near Helensburgh was also supplied to Thirroul loco.





Thirrourl depot's machine shop and buildings to house the fitters, boilermakers and stores were located between the roundhouse and the elevated coal bunker. The track in the foreground was used to stable the accident van and is connected to the road by which engines left the depot to take up their trains.

SRA

The Sydney-bound milk train, then running as a mixed train including two Ashbury cars, passes Thirrourl South signal box double-headed by T and P class (50 and 32 class) engines, both in saturated form. The P class still has its headcode disc in front of the chimney, so the T class probably has been attached here for banking duties between Stanwell Park and Otford on the original line. This would date the photo between 1917 and 1920. The saw-tooth profile of Thirrourl's engine shed and the smoke chimneys are shown well. Note the original weatherboard cladding on the walls of the shed.

SRA





The open tracks radiating from the turntable at Thirroul were put in subsequent to the opening of the depot in 1917, mostly during the 1940s and 1950s. In 1949, the Public Works Department's engines shunting the Port Kembla industrial network came under the wing of the District Locomotive Engineer at Thirroul, where some repairs were now made. Two such engines are shown in the foreground - 2601 and a 20 class. Note the two wooden D wagons used for loco ash and the hand trolley used to transfer stores between the traffic yard and the machine shop.

SRA

The first experiment with traffic control on the NSW Railways was commenced in 1918 in the Illawarra and Thirroul was made the centre for such operations. Control was housed in the two storey timber building erected on the southern end of Thirroul station. The telegraph office is on the left and this was the first unit concrete building on the NSW Railways. It wasn't until 1933 that Sydney Control Office was opened, having surveillance to Goulburn, Newcastle, Lithgow and Nowra.

SRA





The Public Works Department opened a branch line to serve its new coal loading wharf at Port Kembla in 1915. In those days the line terminated in a large balloon loop where the coal was discharged. The branch line was handed over to the NSW Railways in 1916, but the PWD continued to use its own engines to shunt coal hoppers around the balloon loop. When the NSW Railways took over the shunting at Port Kembla in 1949, it transferred some of its own engines to work the balloon loop. 2613 was one of several of this class of 2-6-2 saddle tanks sent to Port Kembla for such duties.

R.K. Booth

South Coast coal has a higher rank than other NSW coals, meaning that it has a higher fixed carbon percentage and a lower volatile (gas) percentage. It is slower to burn but, once well alight, it is an excellent heat source producing little smoke.

Three water supply columns having 8" diameter jibs were located in loco - two beside the arrival road and one beside the departure road. Two large water tanks on the hill to the west of the coal stage supplied these columns and other services in the depot.

The Railways were anxious to maximise the efficiency of traffic movement on the newly upgraded line in the Illawarra and introduced an innovation to achieve this - Train Control, or simply 'Control'. Special offices were built on Thirroul station to house Control. The supply of engines, the movement of loaded and empty vehicles, the requirements of rollingstock by stations and the surveillance of train movements all came under the supervision of Control.

Thirroul Control was introduced on 9 December 1918 and was responsible for traffic between Loftus and Nowra. At first, all safeworking stations re-

ported the arrival of trains but this soon overburdened Control. The system was modified so that only Waterfall, Wollongong and Kiama reported the arrival of trains and other stations only reported if there was a delay exceeding three minutes. The working of each train was compiled on a card. From this information the working was analysed and returns were compiled for the working of each engine. Under the previous system, the management of traffic was left to each station master who became a law unto himself, sometimes resulting in local decisions which had adverse effects further along the line.

The well-planned yard and loco facilities at Thirroul were to become provident for the Railways, since further developments were to occur after they were installed. A branchline from Wollongong to Port Kembla had been already opened in 1916 to serve new coal loading facilities recently constructed by the Public Works Department. Later, this branch served a host of other large industries set up one by one, including the steelworks. In 1932, the Unanderra-Moss Vale line was opened, providing more work for Thirroul depot and its men.



Office staff file past 3140 which has brought them to Port Kembla. The engine run-round siding is on the right. Note the white painted clearance lamp beside the engine.

R.K. Booth

5223 waits at Port Kembla station with an afternoon workers' train in 1960. This train picked up most of its passengers at Cringila and Lysaghts for all stations to Scarborough.

R.K. Booth





When the line to Port Kembla was duplicated in 1941, the junction was moved from Wollongong signal box to Coniston, where a signal box was erected using second-hand components from the old Woodville Junction box near Newcastle. 3229 passes Coniston box with No.120 fast milk for Darling Harbour. R.K. Booth

The Port Kembla branch in double track days had an unusual junction arrangement with the Illawarra line at Coniston. The down Illawarra line and the up branch line shared a short common section of track thereby avoiding a diamond crossing. 3255 takes the Port Kembla branch with a ten-car train on 4 July 1964. The Illawarra lines are on the left. R.K. Booth





The 12½ mile climb between Unanderra and Summit Tank passes a mixture of tall eucalypts and rainforest which usually cast shadows over much of the line. A tour special run in the afternoon provided an opportunity to photograph one of the few illuminated locations and on this occasion 3136 produced an impressive exhaust resulting in this pleasing composition near Dombarton.

R.K. Booth



5375 reverses a three-car train past the signal box into the carriage sidings at Wollongong in the early 1960s. The main line signals in the vicinity of Wollongong at this time were of the upper quadrant type. The example shown here has a wooden main post.

R.K. Booth

The first shipping facilities at what was later to become Port Kembla were established in 1884 when the Mount Kembla Coal Company opened a coal-loading jetty supplied by its mine on the slopes adjoining Mount Kembla. The name Port Kembla wasn't adopted until just over a decade later. The jetty location was first called Red Point, which is the name given to a prominent nearby headland, so called by Captain Cook in 1770. The mine and jetty were connected by the company's own 7 mile railway. In 1888, the Southern Coal Company took out a lease adjoining the Mount Kembla Coal Company's workings and it constructed a railway to serve its own jetty alongside that of the Mount Kembla Coal Company at Red Point. Both coal lines ran parallel between Unanderra and the jetties. The Southern Coal Company's mine was a failure because of a washout in the coal seam, but later the company put its line to good use when transporting coal for shipment from a new mine developed near Corrimal in 1891. The company was granted running rights to use its own engine and wagons on the Illawarra line from Corrimal to the junction with its line near Mount Kembla signal box.

These private coal loading jetties were too exposed to the swell and rough seas which developed during bad weather. There was considerable agita-

tion for the Public Works Department (PWD) to improve the port so that deep sea ships could be used in the coal trade, and so there could be some measure of protection from rough seas. The activities of the PWD were to have important implications for the NSW Railways and Thirroul depot in particular.

The PWD took over control of the two private coal loading jetties at Port Kembla, plus nearby portions of the two coal railways, although the private companies still ran their own engines and trains to the jetties. The Harbours and Rivers Branch of the Public Works Department commenced building an eastern breakwater in 1900 and a northern breakwater in 1908. The PWD brought its own locomotives to Port Kembla for the transport of stone from nearby quarries to the breakwaters. The first quarry, half a mile south of the eastern breakwater, lasted until 1906 when a second quarry at nearby Reids Hill was opened. This quarry was exhausted in 1928, when a third quarry at Gillans Hill, three miles from Port Kembla, was opened.

A locomotive shed and workshops were built at Reids Hill quarry in 1901 in connection with the breakwater construction and maintenance. These facilities were used later for PWD engines shunting exclusively the industrial network of lines in the vicinity of the wharves. The first industry to be



5189 takes the Port Kembla branch at Coniston with a train from Thirroul in 1958. The leading truck is a wooden D wagon with a load of ashes from Thirroul loco. A mixture of S and K wagons leads five LCH coal hoppers and a brakevan, comprising a typical goods train of the period.

R.K. Booth

located at Port Kembla was the Electrolyte Refining & Smelting Co. in 1908, followed by Metal Manufacturers in 1917 and Australian Fertilizers in 1920.

Improved facilities for coal handling at Port Kembla were brought into use in 1915 and these included a new coal loading wharf working on the conveyor belt system. A part of the scheme was the construction of a single track branch railway to Port Kembla, leaving the Illawarra line at Mount Drummond (later Coniston) and skirting the western edge of Tom Thumb Lagoon to where Cringila station now stands. The line then followed the original Southern Coal Company's line to Port Kembla North. Indeed, the new railway was intended to supersede the Southern Coal Company's line which the PWD had resumed in 1912 but was now in a poor state of repair. The new line terminated at Port Kembla North with a large balloon loop having coal discharging facilities and storage sidings. The PWD handed over the line to the NSW Railways on 31 July 1916, but used its own engines to shunt wagons in the balloon loop.

The Port Kembla line, when opened, left the Illawarra line at Mt Drummond Junction (near the present Coniston). It was a single ordinary train staff section from there to Port Kembla. Mt Drummond was made an intermediate staff station in

1919 to overcome the need of transferring the main line electric staff to and from Wollongong by hand when running trains on the branch.

The branch line to Port Kembla was intended to be a coal line only, but local agitation urged that a passenger service be provided. New housing was being developed at Mt Drummond and rail transport for people living there and for those working in the industries established at Port Kembla was being sought. A short extension for this purpose was opened between Port Kembla North and Port Kembla on 5 January 1920. For the first year, passenger services were operated from Wollongong to Port Kembla by PWD engines hauling two American suburban cars. PWD engines Nos. 28 and 29 were fitted with Westinghouse brakes to run the trains. These passenger trains started from the down dock platform at Wollongong. There was only one intermediate stop, at Haig's Platform at the Springhill Road crossing. Electric staff was now introduced on the branch, the sections being Mt Drummond-Port Kembla North-Port Kembla.

When the Illawarra line was duplicated southwards to Wollongong in 1923, a new signal box was opened at the southern end of Wollongong yards. Opportunity was then taken to extend the Port Kembla branch northwards to this point for the junction. The main line and branch then ran side-



Rock falls and adequate drainage are two problems associated with the Unanderra-Moss Vale line and these can still cause problems during periods of cyclonic rain, when nearby Robertson can have the state's highest rainfall total. Two rock-fall shelters, which have been erroneously called snowsheds, were built to prevent landslips' cascading onto the line. 3136 emerges from one of these shelters as it climbs upgrade from Dombarton.

R.K. Booth

by-side for about 400 yards before separating. A passenger platform at Mt Drummond was opened on the branch line only in 1924. Mt Drummond was re-named Coniston the next year.

1926 was a significant year in the development of the Port Kembla branch line. Hoskins Iron and Steel Limited commenced to transfer their iron works from Lithgow to Port Kembla and, in doing so, formed into a new company called Australian Iron and Steel Limited. A platform was opened at Cringila in 1926 for workmen building the new steelworks. Other associated industries followed over the next twelve years. Allans Creek signal box was opened in 1937 to serve exchange sidings with Australian Iron and Steel, and Lysaghts.

All the additional traffic on the branch led to its duplication to Port Kembla North in 1941. The junction of the Port Kembla branch was now moved back to Coniston, where a signal box constructed of parts reclaimed from the old Woodville Junction signal box near Newcastle was erected. The double track was extended to Wollongong at the same time. Cringila was provided with an island platform for

the double track. Automatic signalling using upper quadrant semaphores was introduced between Coniston-Allans Creek and Allans Creek-Port Kembla North. The single line from Port Kembla North-Port Kembla operated under electric staff at first, but single line track block was substituted later.

One of the stipulations laid down by Hoskins when moving their iron works from Lithgow to Port Kembla was the building of a line from Port Kembla to Moss Vale. The Government was prepared to do this subject to the company spending over three years the sum of £750,000 on the construction of an iron works at Port Kembla. This arrangement was later ratified by Parliament in 1927. During the next year both projects were commenced.

A cross-country line from Port Kembla to Moss Vale would give shorter access to the main southern line and so save in freight costs for railing steel in that direction. Limestone, an essential ingredient for removing silica impurities from iron ore in its conversion to iron, could be railed directly from a very pure and substantial outcrop near Marulan.

Locating a suitable route up the steep Illawarra



The stations at Burrawang and Calwalla were constructed of pre-cast concrete slabs which require virtually no maintenance except for an occasional coat of paint. 3136 has no passengers to pick up as it passes Burrawang on Saturday, 13 February 1965.

R.K. Booth

escarpment was very difficult. The country west of the escarpment is heavily dissected by streams tributary to the upper Nepean River system. Staking of a route commenced in 1925 and was completed two years later. Construction of the line commenced in 1927, the Department of Railways building the line itself. The line was opened for traffic on 20 August 1932.

The junction for the single line to Moss Vale was at Unanderra where exchange sidings connected with the private network of the steelworks. The junction of the Moss Vale line was initially located 300 yards south of Unanderra. This saved building two culverts across streams. Upon divergence from the Illawarra line, the line swung south-west and commenced immediately a $12\frac{1}{2}$ mile climb inclined almost entirely at 1 in 30. The line in this section consists of a continuous series of 10 chain radius reverse curves. The grades have been compensated for this sharp curvature, so that the effective grade confronting trains does not exceed 1 in 30.

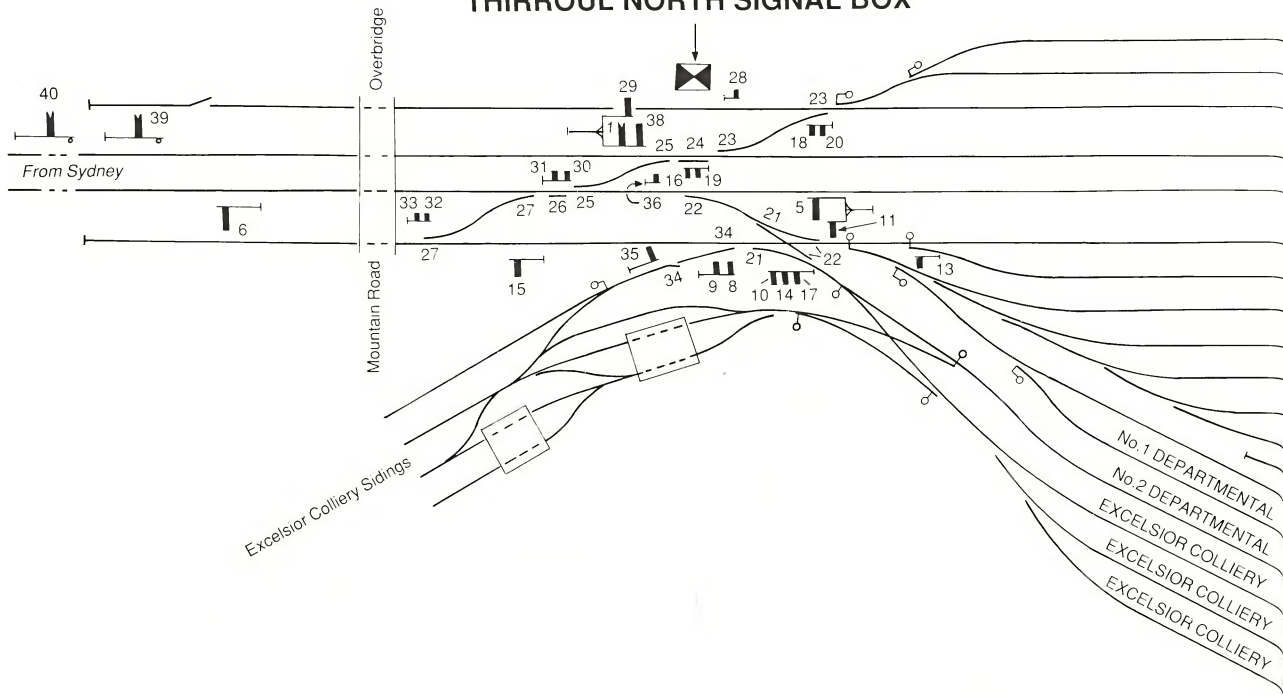
At first, it seems strange that such a steep grade had been chosen, particularly since the Railways had made expensive deviations to improve gradi-

ents elsewhere on the system. However, the precipitous nature of the country really meant that there was no reasonable alternative.

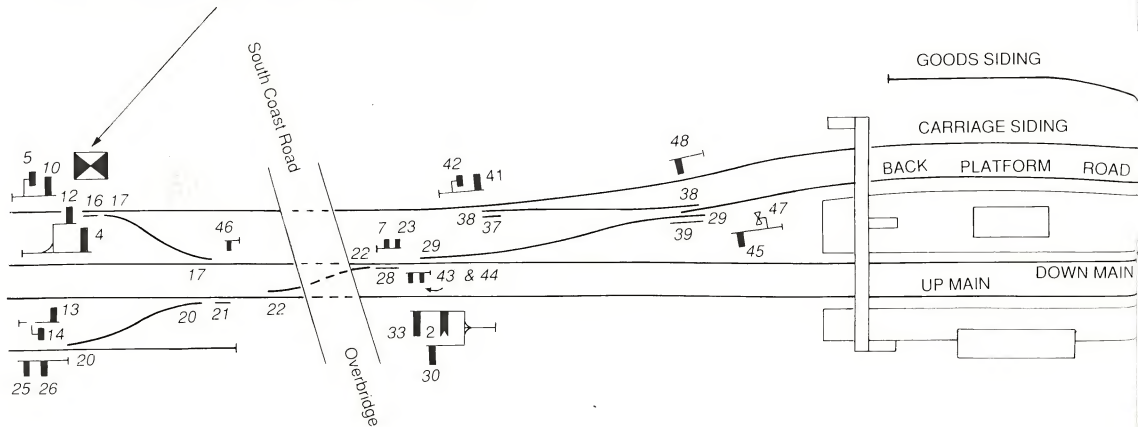
Rock falls and slipping ground are a feature of this area and have given trouble throughout the line's existence. In anticipation of this, two rock-fall shelters were built to protect the line close to the $61\frac{1}{2}$ mile post and 400 yards beyond. The first shelter is 330 feet long and has a rectangular section. Its reinforced concrete roof is supported by similarly made piers. Twenty open-side bays are on the ocean side and a curtain wall lines the inland side. Originally a short tunnel was planned for this site, but it was opened out during construction of the line. The second shelter was much shorter at 72 feet long. The short Illawarra Range No.1 tunnel is located between these two rock shelters.

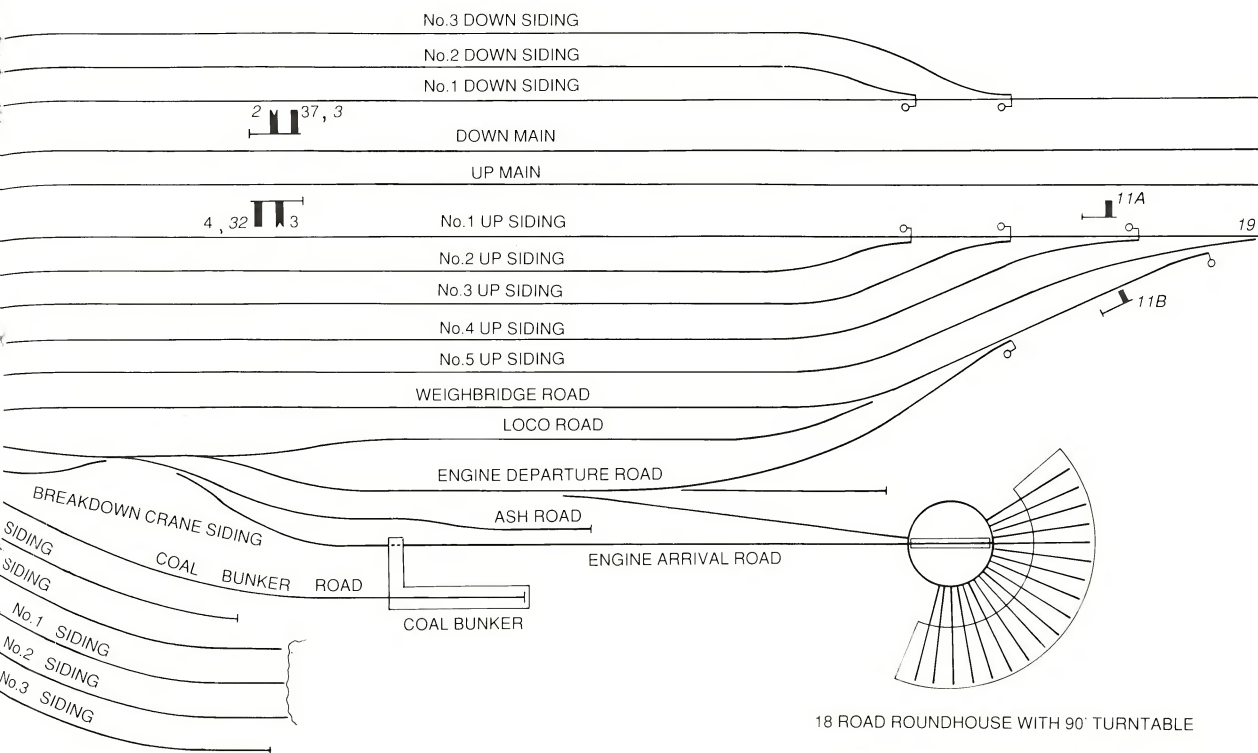
As the line, still climbing at 1 in 30, passes through a convenient notch in the escarpment, the coastal panorama disappears, but the country now falls away steeply to the west. The headwater streams of the Avon River have cut their tracts into the plateau. The gradient eases to 1 in 120 temporarily while passing through the 2060 foot Illawarra

THIRROUL NORTH SIGNAL BOX

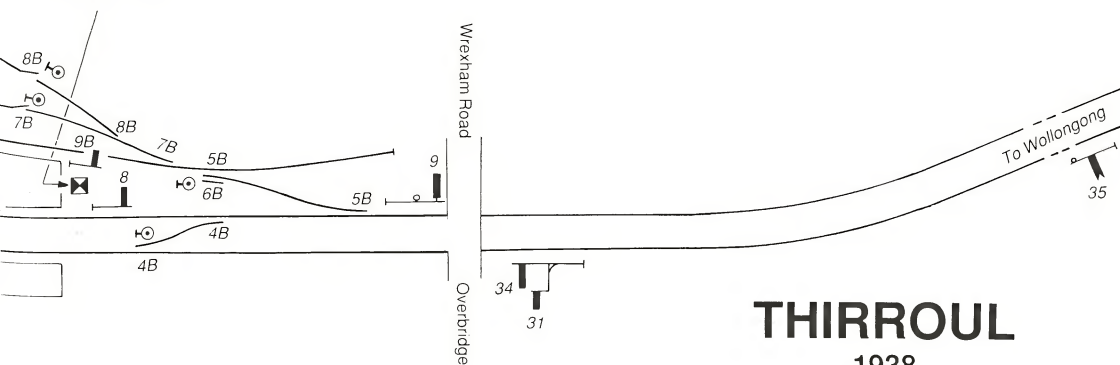


THIRROUL SOUTH SIGNAL BOX





FRAME B



THIRROUL
1938

Range No.2 tunnel. Both Illawarra Range tunnels have the wider dimensions of the City Railway type and are built with vertical sides.

About half a mile beyond the tunnel, a tall curved viaduct having a steel decking on concrete piers is encountered suddenly, since there is no approach embankment. The summit of the climb from Unanderra is reached at the 66m.50ch. point, the line having gained 1755 feet in altitude over a distance of 12½ miles.

Summit Tank is a very appropriate name given to the location of a water tank at the top of the gruelling 1 in 30 climb. An ash pit was provided here for firemen to clean their fires. Water for the tank was supplied from a concrete dam across the Avon River about 4½ miles westwards. Water delivery to the tank gravitated from the dam by a fibrolite pipe laid beside the line.

The ruling grade beyond Summit Tank was now improved to 1 in 60 against down trains but continuous reverse curvature using 10 chain radius curves was still used. The 1 in 60s were compensated for curvature.

The first station on the line was Mount Murray, where the forested sandstone country is left for cleared fields on shale and basalt. The gain in altitude is appreciated at Ocean View where Lake Illawarra and the Pacific Ocean beyond can be seen on a clear day. A short platform serving a cluster of local farms was opened at Ocean View in 1936.

The line passes its highest point of 2471 feet at Ranelagh, where a small platform was opened in 1932. The platform was renamed St Anthonys in 1948. The line then follows undulating country on easy grades across the plateau to Moss Vale. The only major settlement passed is Robertson which was opened with the line in 1932 and had the earlier distinction of possessing the line's only crossing loop. Small platforms with siding accommodation were provided at Burrawang and Calwalla.

There were two safeworking sections at the opening of the Unanderra-Moss Vale line in 1932: Unanderra-Robertson and Robertson-Moss Vale. The first-named section was worked under the divisible



electric staff system. A train from Unanderra had to reach Summit Tank and phone in its whereabouts before a second train could follow. Similarly, a second train could not leave Summit Tank until the first train had reached Robertson.

A loop was opened at Summit Tank in 1937 to improve crossings on the line. The watering facilities at Summit Tank were increased in 1952 with the installation of a second tank at the Moss Vale end of the crossing loop. This tank had a jib attached and was mounted on a steel stand. The original tank supplied the water column at the Unanderra end of the loop. This column was placed between the main line and loop so that engines could take water from either line. A turntable for turning bank engines was provided in 1953 and had the unique location of being very close to the plateau escarpment. The opening of Summit Tank as a safeworking post

Not for resale



The one class of engine which symbolised steam operation on the Illawarra was the P class. A nicely cleaned example, 3266, was captured at rest in Wollongong loco on 4 July 1964. This was the final form of the P class having the boiler mounted on higher frames to provide greater air space over the ash pan.

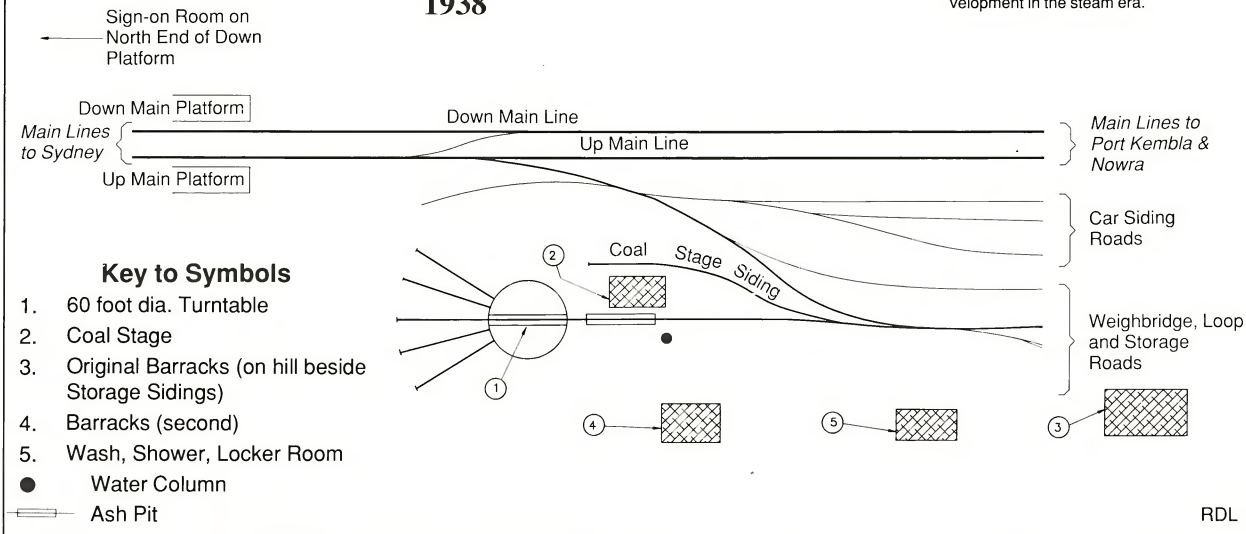
R.K. Booth

Above Left: *Dombarton was opened as a crossing loop in 1943 to divide the lengthy Unanderra and Summit Tank section, for which ascending goods trains were allowed 75 minutes. The main line curves to the right on a 1 in 30 grade while No.1 refuge siding levels out straight ahead. Vegetation obscures Nos. 2 and 3 refuge sidings, but a platform oil lamp and the top of a signal mark the position on the right.*

SRA

WOLLONGONG DEPOT 1938

NOTE: This diagram is based on the drawing of the depot at its maximum development in the steam era.



Above Right: 5601 pauses in its duties as Wollongong's shunting engine until 3207 leaves the platform with a Kiama train and clears the section ahead. 1 February 1960. R.K. Booth

Below Right: A 32 class and a set of suburban cars seemed inseparable from the Illawarra line in steam days as this was the most common mode of rail passenger transport. The decrepit workman's van on the left is a former Improved Redfern car, which was a common passenger vehicle on the Illawarra line around the turn of the century. This scene was taken at Scarborough in January 1963 and shows 3390 with a Sydney-bound passenger train. R.K. Booth

Below: The yards at Wollongong were remodelled and enlarged in association with the line duplication to this point in 1923. 3140 makes a spirited start with the Moss Vale passenger as it heads southwards through the yard. Some of Wollongong's loco watering facilities can be seen on the left, while a 32 class waits in loco beyond the right of the last carriage. R.K. Booth





dispensed with the need to use divisible electric staff.

In 1941 it was proposed to open a crossing loop at Mount Murray. A plan for the signal box to work the interlocking was prepared but the whole idea lapsed.

The long unbroken climb from Unanderra to Summit Tank was causing delays to traffic during the World War II years, making a crossing loop in this section essential. The continuous 1 in 30 climb made a conventional loop impractical for trains starting on the heavy grade, so a novel zig zag arrangement straddling the main line was opened on the side of the range in 1943 and called Dombarton.

When crossing trains, it was usual to arrange train running such that an ascending or 'down' train arrived first and was refuged to allow the descending or 'up' train, with hand brakes applied, to pass straight through. The ascending train, upon arrival in the No.1 refuge siding, reversed on the level under the main line to the No.3 refuge siding. The slope of No.3 refuge siding was inclined at 1 in 150 in a way to give an ascending train a short downhill start before regaining the main line. In all, the crossing arrangements at Dombarton were very well thought out.

The range of working of Thirroul crews extended to Sydney and most of the metropolitan yards, to Port Kembla, Nowra, Moss Vale and Goulburn. By the 1950s, more than 80 enginememen were employed at Thirroul depot, including 30 drivers, 40 firemen (some of whom were acting drivers), and about 15 cleaners. In addition, two fuelmen, a fitter and mate, a number of call boys and a chargeman were employed on each of the three shifts per day. The depot was the responsibility of the District Locomotive Engineer (DLE) whose office staff included the roster clerks. Altogether, in excess of 100 men were employed at Thirroul.

Wollongong was an out-depot (or sub-depot) of Thirroul. Although no engines were allocated there, local staff in steam days consisted of 11 drivers, 11 firemen and two fuelmen. Crew rostering at Wollongong was carried out by the Station Master in conjunction with the Thirroul roster clerk. Overall supervision of Wollongong loco was exercised by the DLE at Thirroul who made regular checks as a part of his personal supervision. Wollongong crews were mostly involved in passenger working but they did man the Wollongong yard shunter shifting goods wagons and car sets.

The first loco facilities at Wollongong consisted of a single turntable road leading to a 50' turntable on the western side of the main line. A 60' turntable was substituted in 1896 to handle the longer bogie-tendered engines being introduced. The original turntable was then sent for re-use at Moss Vale. (Hard to explain was the position of the original engine shed on the *down* side of the mainline.) When duplication of the line was extended to Wollongong in 1923, the yards were remodelled and extensively enlarged, sweeping aside the old loco facilities.

The engine facilities at Wollongong in double line days were minimal but functional and without a shed. The depot was located on the up or western side of the line, close to the south end of the up platform. A 60' manually-operated turntable was provided and had five radiating roads. Engines were hand coaled from a low wooden stage located on an appropriately named 'coal stage siding'. An ash pit plus a 9" water column were located near the coal stage. Facilities for the men were positioned near the coal stage and these consisted of wash, shower and locker rooms. There were also a crew barracks in steam days. Four bedrooms plus a separated kitchen were provided. The barracks were first sited on the bank west of the carriage shed but were subsequently replaced by newer accommodation not far from the turntable. The Wollongong barracks were used regularly by Eveleigh and Goulburn crews, both enginememen and guards.

A shunting crew was stationed at Nowra in steam days making this place a small sub-depot of Thirroul also. However, no engines were allocated to Nowra.

Steam passenger working on the South Coast fitted into three categories:

- Trains to and from Sydney working to Wollongong, Port Kembla, Kiama and Nowra. Many of these trains worked all stations outside the Sydney metropolitan area but some were express and semi-fasts. The latter were designated as 'Fast Passenger' in the working timetables.
- Local trains serving stations bounded by Coalcliff, Wollongong, Port Kembla and Kiama.
- Cross-country trains between Wollongong and Moss Vale.

The Sydney passenger trains were worked by crews from Eveleigh, Thirroul and Wollongong. Of the proportion manned by South Coast men, Wollongong had the greater share. As an example of Sydney passenger work taken by Thirroul crews, there was one regular return trip to Sydney on Sunday mornings. Also, on a Saturday afternoon, No.120 fast milk train was taken to Sydney by a Thirroul crew who, after going to barracks, returned

Above Right: Coalcliff was the usual northern limit for Wollongong suburban services. South-bound local trains in steam days departed from the up platform at Coalcliff and ran wrong road until the junction with the single line, as 3136 is doing here. The 30 class tanks allocated to Thirroul in the later steam days had their coal bunker extended in varying styles. 20 December 1963. R.K. Booth

Right: It was mostly an uphill climb from Thirroul to Waterfall, with the only notable eases being at Coalcliff and Otford. All up goods trains took water at Waterfall as is shown here with 5475 on No.120 fast milk. This train was usually a task for a 32 class, but when milk production peaked late in the year the loading was excessive and a Standard Goods engine was used instead. R.K. Booth





The running of tender engines on the local trains to Scarborough and Coalcliff required some tender-first working in the absence of a turntable at either of these termini. This example shows 3326 arriving at Wombarra with a ten-car train from Port Kembla on 19 December 1963.
R.K. Booth

Above Right: Increasing freight traffic necessitated the duplication of the Illawarra line to Wollongong by 1923. The growth of industry in the Port Kembla area during the next 15 years saw an increasing number of local workmen's trains being run and the capacity of the line was easily capable of handling the additional traffic. 3238 heads northwards from Austinmer with the ten-car K42 local train to Coalcliff on 5 February 1960.
R.K. Booth

Right: The ten-car workmen's trains operating in the Illawarra comprised a standard eight-car set, plus two additional cars. The latter could be the independent type such as the HFL and FL shown here. 5434 leaves Bulli with a ten-car train from Port Kembla on 5 January 1965.
R.K. Booth

on a Sunday morning down passenger.

Most of the Sydney passenger trains were hauled by 32 class engines during the steam days this century. Some were worked by 36 and 38 classes in the final days of steam working. The 35 class had been used on Wollongong trains in the 1930s but it is not known whether Thirroul or Wollongong men of the time were called upon to man these engines. Latterly, Wollongong men were qualified for 30, 32 and 36 class engines.

A good proportion of local passenger work to Port Kembla was worked by Thirroul crews. Further south, one Thirroul crew arrangement was to take an early workers' passenger train to Kiama and to swap over with the crew of a blue metal train from Bombo.

The passenger service to Moss Vale was regularly worked by a Thirroul crew. Wollongong men

filled in at times of crew shortages. When the service was a daily return from Wollongong to Moss Vale and back, the run could be done in one shift. On Fridays, an additional passenger train left Wollongong for Moss Vale in the evening, returning on Saturday morning. The Thirroul crew would go to barracks at Moss Vale. One timetable in the early 1960s, incidentally, had two passenger trains crossing at Dombarton on Friday evenings - the up Wollongong passenger going through the reversing procedure to allow the Moss Vale passenger a straight run up the grade while the engine's fire was good and hot.

The local passenger services were hauled by 30 and 32 class engines supplemented by Standard Goods engines of the 50, 53 and 55 classes. The use of tender engines meant a considerable amount of tender-first running was involved since there was





The soft afternoon sunshine of May 1963 produces a pleasing contrast for 3077 and its local suburban train moving along at a good pace between Thirroul and Bulli.

R.K. Booth

Above Right: *The 30 class 4-6-4 suburban tank engines put in 35 years' service on the Wollongong local trains. 3076 heads an eight-car suburban set on an up local passenger train between Bulli and Thirroul.*

R.K. Booth

Right: *The majority of stations on the double line between Scarborough and Wollongong were the wayside type, of which Bulli is an example. Goods engine 5441 arrives at Bulli's up platform, which was added in 1923 for the line duplication. The leading carriage of the ten-car train is a CCA composite, used previously on the Camden and Yass branch lines. Brokers Nose on the right and Mount Keira in the distance form the backdrop. 4 January 1964.*

R.K. Booth

no turntable at Coalcliff, Scarborough or Port Kembla. Timetables could still be met nonetheless, since closely spaced stations precluded any high speeds. The small driving wheel diameter of the Standard Goods engines on the passenger trains produced a rapid exhaust beat which deceived the listener into believing the train was running fast. The number of Standard Goods engines on local passenger services increased towards the end of steam when the number of 30 class tank engines declined. 30 class tanks working to Coalcliff took water at Scarborough.

Carriages used on the local services were the American suburban type, or simply 'suburbans' as the railwaymen called them. A variation of this type of car in the form of BOB sets was also used. Train sizes varied from two or three to eight and ten cars. Ten-car trains were made up of two sets - an eight car set and a two car set. FL and HFL cars were later introduced to build up sets. Unlike the Sydney metropolitan area, a regular frequency timetable was not operated. Instead, trains were run to suit the shift changes at Port Kembla, especially the steelworks, and to suit office workers and school students.

As a quirk of rostering, one could witness a 30 class hauling ten cars and, on another occasion, a 50 class hauling two cars - the reverse of their respective capacities. Some engines, however, were diagrammed to work both local goods and passenger trains on the one day, as will be seen later. The ten-car trains were limited to the Port Kembla-Scarborough-Coalcliff services. A 30 class on a ten-car up train would be replaced by a 32 class or a 50 class at Thirroul for the rest of the journey to Coalcliff.

Kiama services were less frequent and served a smaller population. So, two-, three-, four- and six-car trains sufficed. 32 class and 50 class engines were mainly used, these tender engines being turned at Kiama.

As places such as Dapto and Albion Park grew, so did the teenage population requiring high school education. Until Dapto High School was built, secondary students were transported by train to Wollongong High School, not far from North Wollongong station. In the morning, a 30 class plus four cars worked a school special from Shellharbour. If the number of carriages perched exceeded this number, then the water in the boiler would approach 'low tide', as one driver put it, at the top of





3093 had just shut off steam on a southbound all-stations run approaching Woonona on 5 January 1965. The coal bunker of 3093 has been extended using a railing to increase its capacity. The signal, Bulli's up distant, and the arch bridge beyond were both casualties of the electrification of the line in the mid-1980s.

R.K. Booth

Above Right: *One of the oddities to be seen in the Wollongong area was a 30 class hauling ten cars and a goods engine hauling two cars - the opposite of their respective capacities. However, some goods engines were diagrammed to work both freight and passenger services on the one day, explaining the use of 5441 with two cars leaving North Wollongong. Another scene which has disappeared is the use of pensioned-off rollingstock as workmen's vans. Stowed in the siding here is the unique former BAM 1 and a four wheel HG brakevan. 14 January 1964.*

R.K. Booth

Right: *The two-carriage load leaves 3224 with steam to spare as it crosses the wooden trestle approaching Bombo. This train, No.188, was the last passenger service for the morning from Kiama to Wollongong in steam days. The wooden trestle viaducts served the railways well, most lasting ninety years or more. 27 June 1964.*

R.K. Booth

Shellharbour bank.

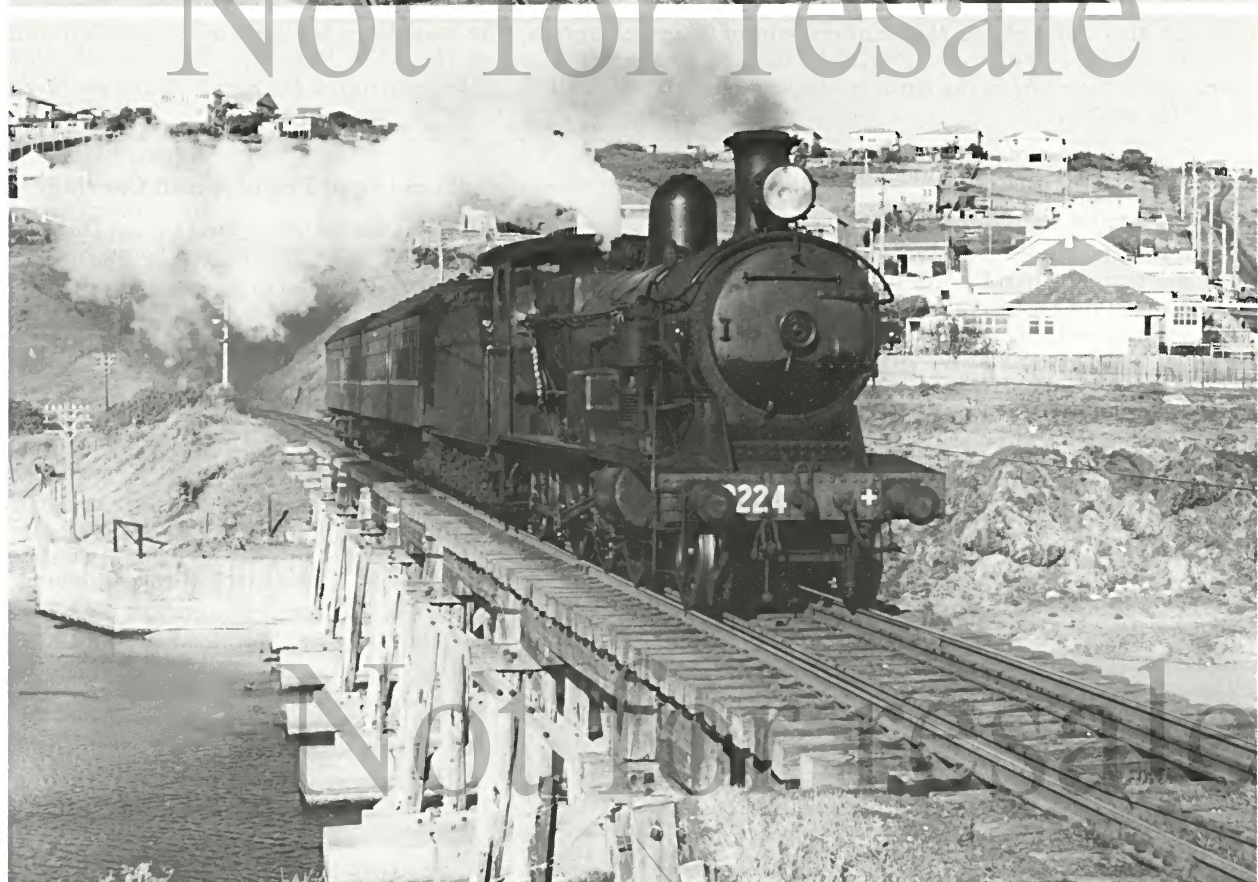
A regular train returned the students home after lessons. At first, the train ran empty from Wollongong to Mount Pleasant signal box where the engine, usually a 50 class, ran around its train before heading back to North Wollongong. Later, the timetable was adjusted so this train, No.459, started from Thirroul and ran empty cars to North Wollongong. No.459 also picked up day-shift workers from the Port Kembla area at Coniston where, on occasions, No.459 and K12 would happen to line up exactly, allowing the more daring to simply step across the verandahs of the suburban car sets instead of changing platforms by the overhead bridge! Once No.459 reached Kiama, its cars were stabled. The Thirroul crew then turned the engine and proceeded to work No.262 pick-up goods to Thirroul, leaving Kiama at 5.40pm.

The main depot for the car sets used on the local services was at Wollongong where there were extensive sidings plus a two-road carriage shed. Car sets were also stored on the back platform road and

siding at Thirroul station, and on No.5 up siding in Thirroul yards. One set could usually be seen at Scarborough during off-peak times. Kiama's sidings usually had several car sets stabled overnight.

The working timetable numbering of the Coalcliff-Wollongong-Port Kembla local steam trains either used a 'K' prefix or a 400 series number, as exemplified in a preceding paragraph. The use of the dual system is a mystery. K stands for Kembla and the local railwaymen referred to trains for Port Kembla as 'Katies'. Perhaps originally local services to and from Port Kembla were given the K prefix, but the Coalcliff-Scarborough-Thirroul trains not proceeding beyond Wollongong were designated in the 400 series. Maybe subsequent timetable changes extending some services and curtailing others caused the system to intermix.

Another interesting passenger service run by Thirroul men with a 30 class and three cars was No.14 passenger, 4.28am from Thirroul to Sutherland, arriving there about 6.00am and connecting with an electric service to Sydney. The return work-





Cloudy weather seems to make the escarpment brood over the narrow settlement along the upper Illawarra. However, the cleaned boiler cladding of 3252 reflects some brightness coming from the north-east. This view taken in May 1963 shows the southern end of Thirroul station. The two-storey building above the first and second carriages housed the original Train Control centre used on the NSW Railways. The concrete slab building on the right of the train contained Thirroul's Frame B, which controlled the points at the southern end of the station.

R.K. Booth

ing, No.15, reversed the connecting arrangements, leaving Sutherland at 6.43am for Port Kembla, stopping at all stations except Lilyvale. At Thirroul, the engine uncoupled and shunted another six cars onto the train to handle the heavy patronage for Wollongong and Port Kembla. The train ran bunker first to Sutherland and chimney first to Port Kembla, taking water at Waterfall.

As an indication of diagram working of Thirroul engines on local passenger trains, the arrangements shown adjacent were used in the early 1960s.

So it can be seen that engines and car sets were intertwined on the passenger working. The crew rostering was intermixed in a similar fashion involving men from Thirroul, Wollongong and Eveleigh. However, while Thirroul and Wollongong crews would relieve Eveleigh crews, the latter did not work any local services in return.

One of the best remembered Illawarra steam passenger workings was the Wollongong-Moss Vale train. It left Wollongong just after 11 o'clock, connecting off No.45 passenger, 8.30am from Sydney. It arrived at Moss Vale just ahead of No.13 Goulburn/Cootamundra day train which, in turn, had a connection for Queanbeyan at Goulburn. In the opposite direction, the train left Moss Vale at 4.12pm, following the departure of the Sydney-

Diagram Working of Engines and Carriages

No.14	(30 class bunker first, 3 cars) 4.28am Thirroul to Sutherland, arrive 5.58am. Forms No.15.
No.15	6.43am Sutherland to Port Kembla (attach 6 cars Thirroul), arrive 8.47am. Forms No.K8.
No.K8	9.00am Port Kembla to Wollongong, arrive 9.15am. Stable cars.
	Loco turned, coaled and watered at Wollongong in readiness for K7.
No.K7	11.15am Wollongong to Port Kembla (10 cars). Forms K22.
No.K22	12.20pm Port Kembla to Coalcliff (Thirroul 1.04pm to 1.10pm, 32 class engine substituted, tender first to Coalcliff). Forms K11.
No.K11	1.50pm Coalcliff to Port Kembla. Forms K12.
No.K12	3.43pm Port Kembla to Scarborough (stable 8 cars). Forms No.80.
No.80	5.08pm Scarborough to Coalcliff (2 cars off K12). Forms No.81.
No.81	5.23pm Coalcliff to Port Kembla. Forms K46.
No.K46	6.45pm Port Kembla to Thirroul. Engine to loco.

Wollongong has always been a busy railway centre, handling both through and local passenger services. 3045 has just arrived from Kiama and will shunt its two-car train back into the up yards where the passenger carriages were stabled.

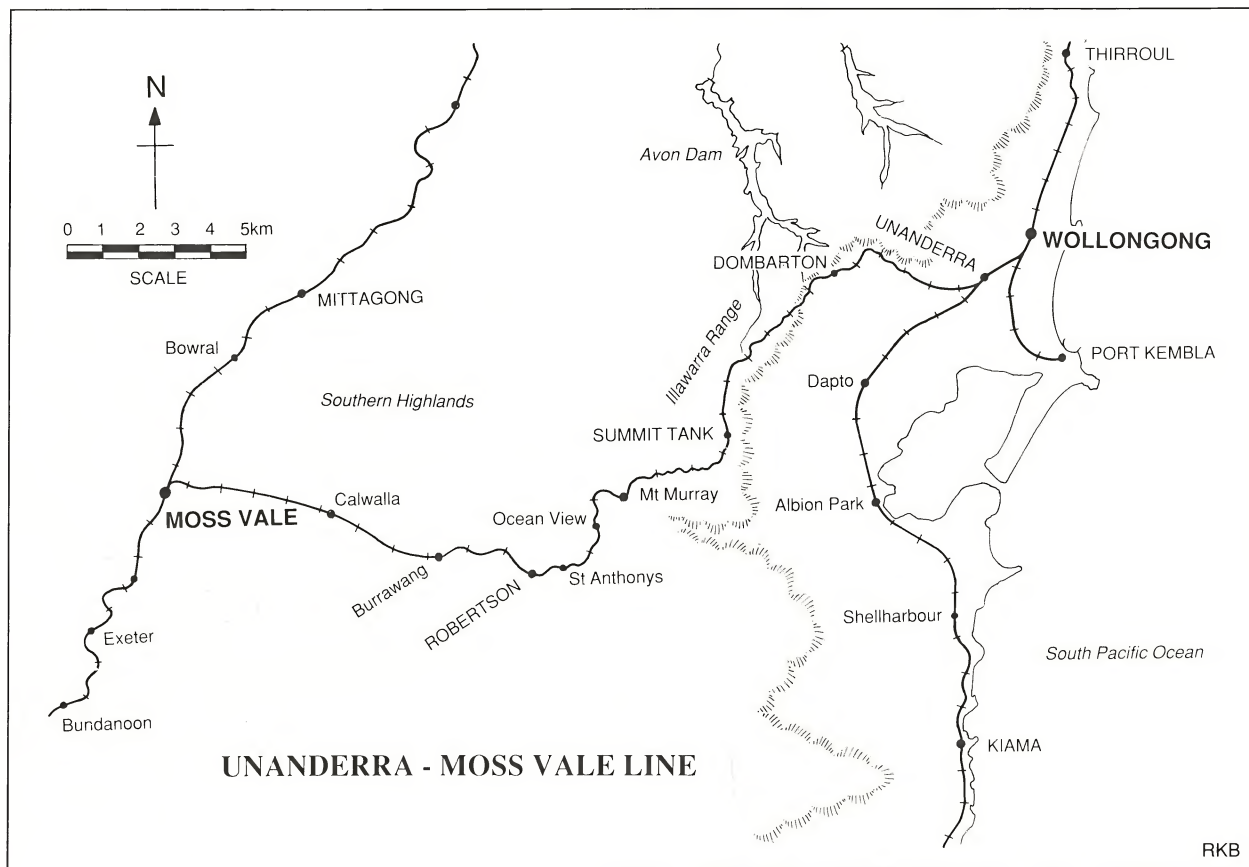
R.K. Booth



In their heyday, the NSW Railways were universal carriers and provided sidings to serve local communities. The competition of road transport and the expansion of suburban housing in the Illawarra saw little need for local good sidings such as this one at Fairy Meadow. Note how the connection with the main line was protected with a catchpoint and a mechanical point indicator. A nicely cleaned 3320 leaves Fairy Meadow with a workers' train from Port Kembla on 11 July 1964.

R.K. Booth





bound No.34 Cootamundra/Goulburn day train which had connecting services from Canberra and Crookwell.

The regular engine was a 30 class tank, which was normally associated with suburban running. Sometimes a 32 class or even a 50 class goods engine would be substituted, even though the load was two suburban cars, just 50 tons. A trip behind a 30 class for such a long run, and the magnificent scenery as the train climbed the 1 in 30 grade to Summit Tank, made the journey something really special. An hour was allowed for the 12½ miles continuous climb from Unanderra to Summit Tank, a task which was easily accomplished since the load was less weight than the engine. Indeed, the crew could pick up 15 minutes on the climb and have ample time, after taking water, to brew a cup of tea and to exchange news with the signalmen and fettlers working at this completely isolated outpost. Occasionally, if a passenger was a friend of the driver, a brief guided tour through the trees to the nearby lookout with its breathtaking drop to Lake Illawarra and beyond, would be sneaked in.

The journey would continue at a faster pace through the pristine bushland of the Avon River catchment, the line continually swinging this way and that through an endless succession of small cuttings. Near Mount Murray, a shriek from the engine's single-tone whistle to exchange greetings with folk at a nearby farmhouse reminded the more

discerning that the engine was not one normally associated with such rural journeys in NSW. Sometimes a stop would be made here to drop parcels or to take an order to Moss Vale. After stopping to set down passengers at Robertson, a brisk run would be made to Moss Vale.

The 30 class was turned at Moss Vale for the return run to Wollongong. A memorable sight sometimes afforded on the descent of the Illawarra Range was the evening view of the rising full moon glistening off the Pacific Ocean.

During the final steam years, the timetable was, in effect, reversed so that the morning train connected off the Sydney-bound *Spirit of Progress* at

Above Right: A unique steam run down the South Coast was No.15 early morning passenger from Sutherland to Port Kembla worked by a Thirroul 30 class and crew. 3076, dwarfed by the Illawarra escarpment, heads No.15 along the single line section approaching Scarborough on 5 January 1965.

R.K. Booth

Right: Robertson is the only settlement of note along the Unanderra-Moss Vale line and was provided with a crossing loop and goods siding from the outset. 3225 is the motive power for the Moss Vale passenger train, shown here stopped at Robertson on 14 April 1960 for passengers and parcels.

R.K. Booth





Even 50 class goods engines could be seen on the Moss Vale passenger at times, as was the case here with 5219 awaiting departure from Moss Vale on 31 December 1960.

R.K. Booth



The Wollongong to Moss Vale passenger was usually entrusted to a 30 class tank engine, a type more associated with suburban duties than lengthy rural journeys. The train usually consisted of two suburban carriages, but in the final days of steam the carriage composition was changed to FL + HCX. The whole ensemble had a distinctly vintage air about it, even by the standards of 1965 when this photo was taken.

R.K. Booth

3097 makes a good smoke display as it accelerates the passenger train for Wollongong out of Moss Vale in February 1966. This train connected off the Sydney-bound *Spirit of Progress* providing quite a contrast in passenger accommodation.

R.K. Booth



Moss Vale. Such a timetable was more suited to the passenger needs of people living in Wollongong. The final carriage composition was an FL second class corridor car and an HCX composite 'dogbox' non-corridor car which had the only first class accommodation. What the 1st class passengers thought upon leaving the air-conditioned luxury of the *Spirit of Progress* and having to clamber on board a dogbox car behind a dirty old steam engine can be imagined.

The Moss Vale passenger was the last steam hauled service on the Illawarra when it was replaced by a rail motor on 20 February 1967. Thirroul depot had been closed in 1965 and latterly engines were sent from Enfield depot to Wollongong for running the service.

As already mentioned, Thirroul men on goods trains knew the road to Enfield (and indeed most of the Sydney area goods yards), Port Kembla, Nowra, Moss Vale and Goulburn. Trips to Enfield and Goulburn meant a stay-over in barracks at the end of a shift. Change-overs with Enfield crews off down goods trains also occurred at places such as Helensburgh and Waterfall so that crews could return to their respective depots at the end of the shift. Steam goods trains working on the South Coast fell into a number of categories:

- Trains conveying perishable traffic, including meat for Wollongong and milk from stations further south - Eveleigh and Thirroul crews.
- Trains to and from Enfield and other Sydney

goods yards - Enfield and Thirroul crews.

- Local trip working bounded by Waterfall, Port Kembla and Unanderra West - Thirroul crews.
- Blue metal trains from Bombo and goods trains to Kiama and Nowra - Thirroul crews.
- Goods trains to Moss Vale, Medway and Goulburn via the Unanderra-Moss Vale line - Thirroul shared this work with Goulburn crews.

No.9 mixed train, nicknamed the 'paper train' because it conveyed the morning Sydney newspapers to South Coast destinations, carried meat for Wollongong and empty milk tanks to Dapto, Albion Park, Kiama, Gerringong, Berry and Nowra. The 32 class engine off this train returned to Darling Harbour with No.120 fast milk picking up full tanks from the stations mentioned previously. Other up perishable traffic, plus any stock, was taken by No.28 through goods which left Nowra at 4.15pm and worked sidings from there to Unanderra. If it was within its load, No.28 picked up empty vans and wagons which had brought in meat and kegs of beer, among other things. This train worked through after Thirroul, although it did stop at Hurstville for 'out-of' traffic and called at Sydenham to pick up 'out-ofs' for Darling Harbour (from stations on the Bankstown line landed at Sydenham by parcel van).

Heavy goods trains from Thirroul to Enfield were marshalled from loads brought in by local trips from quarries, collieries, cokeworks and from industrial sidings in the Port Kembla area. The through loads

which could be taken north from Thirroul were:

Engine Loads, Thirroul - Enfield

Class	Load - Tons
32	495
36	545
50	640
50+50	1150
57	1000
(50 means any one of superheated 50, 53 or 55 class engines.)	

Up goods trains had a hard slog to Waterfall, since the grade commenced upon leaving Thirroul yards and the only notable eases were in the vicinity of Coalcliff and Otford. A stop was made at Waterfall to take water. An engine really in trouble and using a lot of water might top up at Otford. Generally goods trains from Enfield conveyed mostly empty vehicles or wagons loaded with scrap iron for the steelworks. These trains terminated in the down yard at Thirroul where the engines went to loco.

Local trip working was handled by Standard Goods engines supplied by Thirroul and Enfield. As the number of Standard Goods engines allocated to Thirroul diminished, so the number of Enfield engines increased. However, these Enfield engines worked out of Thirroul depot on these trips.

Local goods working centering on Thirroul changed over the years as mines closed, amalgamated, or sent their coal by road. So the number of coal trains decreased. On the other hand, steel products from Port Kembla formed the essential part of up goods trains heading north from Thirroul in the final steam days. Thus, trips from Port Kembla to Thirroul carrying steel products became commonplace.

The following workings give some idea of the local coal train movements in the concluding decade of steam. Some engines owned by the collieries for working their own private railways were permitted to haul locally the company's hoppers along the Illawarra line. This working is not detailed here, but the engines were manned by either the company's crews or by Thirroul crews. A speed limit of 20 mph was imposed and the private engines did not haul NSW Railway wagons except for the brakevan, which could be of the CHG, SHG or LHG type.

Coal train working from Metropolitan Colliery near Helensburgh passed to Thirroul when it superseded Waterfall in 1917. A train (No.56) of empty hoppers and open trucks was worked from Thirroul to Waterfall, where any empty wagons from Eveleigh were added. The train then ran tender-first down to Metropolitan Colliery. After a load of full hoppers was ready, the train climbed back to Waterfall where the load was weighed and then sorted into wagons to be taken north or to be returned to Thirroul. Metropolitan Colliery in steam days was an important supplier of coal to the Railways. It also sold its coal to various establishments with coal-fired boilers. The engine turned at Water-

Right: Double-headed goods trains were run when the loading from Thirroul to Enfield was heavy. A single Standard Goods engine could take 640 tons northwards from Thirroul, but the load for a pair of Standard Goods engines was 1150 tons as a concession to the sharp curvature. 5438 + 5619 take a full load out of Waterfall on No.60 goods in August 1960.

R.K. Booth

Below Right: The 57s made their very first revenue run to Thirroul in 1929 and were frequent visitors there until their demise in 1961. 1000 ton loads could be taken northwards to Enfield, reducing the need to use smaller engines double-heading. The sandstone capped escarpment forms a rugged backdrop for 5714 heading northwards near Colledale on 5 February 1960.

R.K. Booth

fall before taking its train (No.57) back to Thirroul. If there were no wagons to be collected from or returned to Waterfall, then the train worked directly to and from Metropolitan Colliery.

Basically, Coalcliff Colliery sold its coal for the export market, railing it through Port Kembla. The steelworks did purchase some coal from here also. Some unauthorised train working did occur occasionally at Coalcliff. If the engine on a loaded coal train for Port Kembla was known to be a dull steamer, the 30 class off a waiting local passenger train would be called upon to push the train to the mouth of the Clifton tunnel. Strictly a bank engine key should be used for such working but this safeworking device was not available at Coalcliff. This initiative was not in accord with proper safeworking procedures, but it did keep the trains running without causing delays.

Bulli Colliery shipped coal via its own wharf at Bulli Point or through the former Southern Coal Company's wharf at Port Kembla when the Bulli wharf was out of action due to storm damage. Other companies also railed their coal to be shipped from the Bulli jetty. AIS purchased the Bulli Colliery in 1936 to supply its coke ovens near Cringila. Either its own engine or one hired from the Railways pushed loaded hoppers to the exchange sidings near Bulli Coal Siding signal box, from where a Standard Goods engine took the train to Cringila. AIS later built its own special high-capacity bogie coal hoppers for this work. In the early 1960s, NSW engine 1915 was hired to Bulli Colliery for working its short line and lasted on this work until 1965, when Thirroul depot closed.

South Bulli Colliery near Bellambi had its own fleet of four wheel non-air hoppers with the company's initials, SB, painted on the sides. South Bulli supplied coal to the Mount Pleasant cokeworks near North Wollongong. Train loads of coal in company hoppers were sent to Port Kembla for shipment also. The 1964 working timetable does list one train departing Bellambi for the Inner Harbour at Port Kembla, with the weighing to be done at Wollongong. This traffic would have been carried in UT wagons necessary for the tippler at Inner Harbour.





5612 hauls an unusual load consisting of a solitary S truck plus four brakevans (PHG, MHG, MHG, LHG) near Thirroul. This train was a local trip working from Port Kembla. A number of the overbridges, built when the line was duplicated in the 1915-1923 period, had a reinforced concrete arch with brick abutments and walls.

R.K. Booth

Locos on local goods trains between Thirroul and Port Kembla usually worked chimney-first on the down and tender-first on the up. 5035 has an assortment of four-wheel wagons in tow as it approaches Thirroul on 5 February 1960. Even by this date, 50 class engines still fitted with original style tenders were becoming a rarity.

R.K. Booth



Not for resale



5435 was one of several of the 53 class engines to be fitted with specially balanced driving wheels and had an X painted on its buffer beam to indicate that it was so equipped. However, no special use was made of this feature on the Illawarra. 5435 rounds the curve near Bulli Coal Siding signal box in May 1963 with a short load from Bombo, comprising a BBW ballast wagon, six S trucks and a PHG brakevan. R.K. Booth

Loading from the industrial area around Port Kembla, especially the steelworks, provided most of the freight tonnage in the latter days of steam. Loads such as this being hauled by 5366 were remmarshalled at Thirroul yards before movement north. This scene was taken near Bulli Coal Siding in May 1963. R.K. Booth





The output of coal after the miners' summer holidays took a while to build up and not much loading was expected judging by this train's composition of two S, three LCH and one CCH wagon in front of the LHG brake van. The running of trains to Metropolitan Colliery was a regular Thirroul working and 5414 had been allotted the task on 20 January 1965 when photographed north of Wombarra. The landslip behind the train shows some of the unstable terrain encountered along the Illawarra line.

R.K. Booth

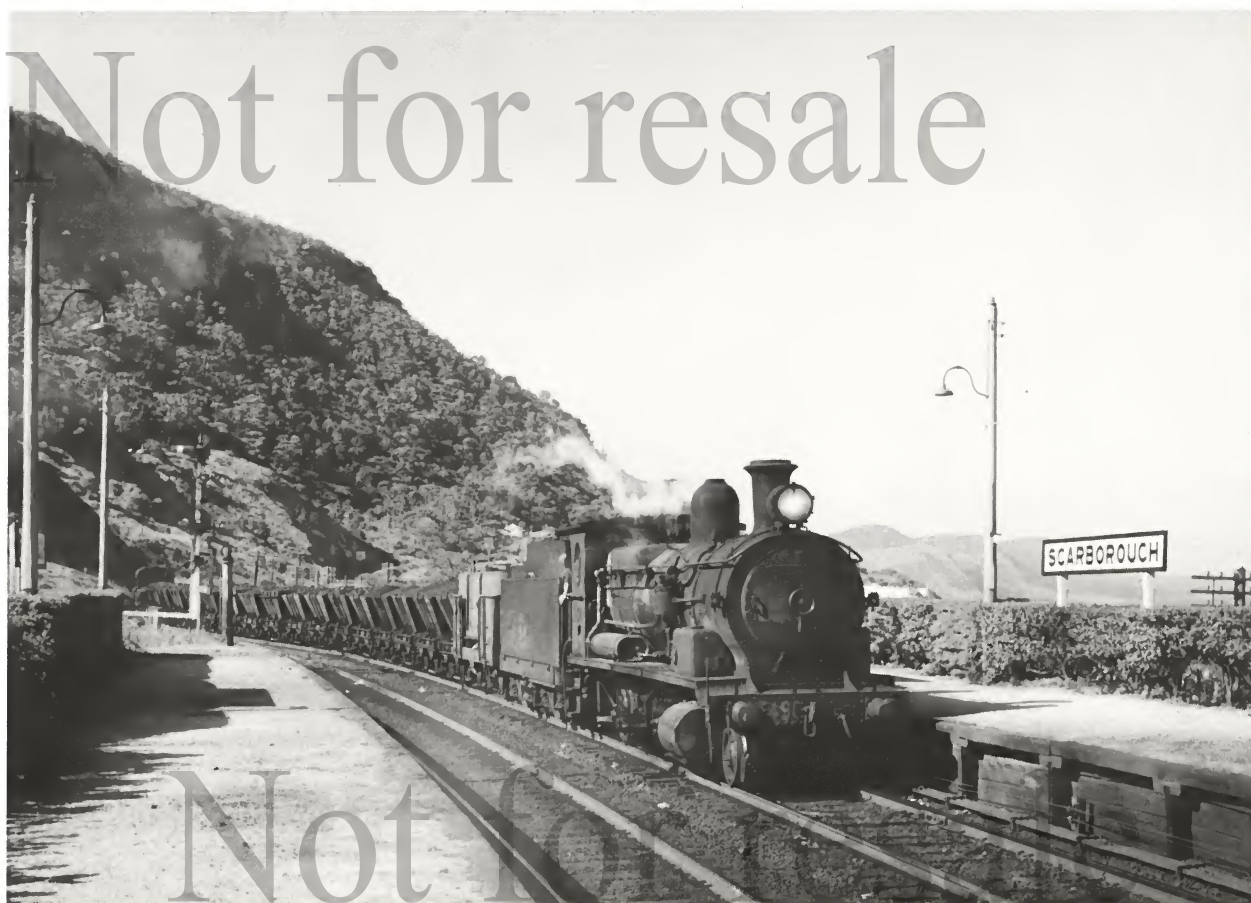
Corrimal Colliery supplied its own cokeworks next to Corrimal station and its coke was sold to the local market requiring transport by rail. Coal was also sent by rail to Port Kembla for shipment. The Mount Pleasant, Federal and Coalcliff cokeworks supplied coke to the domestic market, the export market and, when required, to the AIS steelworks. This generated traffic over the Illawarra line.

There was one colliery connection off the Unanderra-Moss Vale line. It was opened as the Port Kembla Coal Company's siding, 2 miles before reaching Dombarton. The siding was later known as Unanderra West and it trailed down trains. An engine with a load of empty LCH hoppers worked tender-first to Dombarton where it ran around its train. It then dropped downhill to the siding points, which were unlocked with the staff key. The loaded train was propelled back up the main line until clear of the points before it could return to Unanderra and leave its load in the AIS exchange sidings. An engine fitted with a light on the tender was preferred on this work.

Even though the Illawarra line was well supplied

with facilities for engines to take water, there was nothing provided at Port Kembla. The Port Kembla North yard shunter would have to be worked to Wollongong from time to time throughout the day to get water. Opportunity was taken on such journeys to carry any freight which needed transferring.

The Illawarra escarpment is capped by the prominent and resistant Hawkesbury Sandstone. As the altitude of the escarpment rises southwards, so does the coastal plain, designated as the Illawarra, widen. Between Albion Park and Gerringong, a number of basalt lava flows has stiffened the strata resulting in hillier country. The Illawarra railway first encounters this changed topography at Shellharbour tunnel, which pierces one of the hard lava flows. The famous blowhole at Kiama has been naturally excavated from another of these flows. Besides providing the fertile soils for the dairy industry, the basalt has been an excellent source of blue metal for road surfacing, concrete and importantly, railway ballast. As well as being used on Illawarra line tracks, blue metal from Bombo is still railed to Sydney for further distribution within the



5490 regains the double line at Scarborough in January 1963 with No.57 coal train conveying loading from Metropolitan Colliery. The station nameboard with cast iron letters and the ornamental electric lamp brackets are becoming quite a rarity nowadays.

R.K. Booth

Coalcliff Colliery sold most of its coal to the export trade and railed it to Port Kembla for shipment. 5173, one of a trio of 50 class engines allotted to Thirroul at the time, coasts down the grade near Austinmer with a loaded coal train from Coalcliff on 15 January 1964.

R.K. Booth





Right: Coke was an important commodity carried by the railways earlier this century. One of the last cokeworks to survive on the Illawarra is that at Coalcliff. The 1920s era semaphore signals frame the works as another load of coke is quenched.

R.K. Booth

Left: The movement of privately-owned coal hoppers over the state-owned railway has been a feature in the Illawarra from the earliest of days. Australian Iron & Steel made a great leap forward when it provided high-capacity bogie hoppers to convey coal to its cokeworks at Cringila. 5173 draws a train load of these wagons onto the main line at Bulli Coal Siding in May 1963.

P.C. Booth

Below Left: Of the three variants of the Standard Goods engines, the 120 strong 55 class were the last to be added but also the first to be withdrawn. They were fitted with Southern valve gear, which required an upward step in the running board to clear its mechanism and this feature easily distinguished them. By the early 1960s, the number of 55 class, or K class as they were more familiarly called, had dwindled considerably but several could be usually found on local trip working in the Illawarra. 5617 was so employed on a coal train from Bulli Coal Siding to AIS sidings at Cringila and is seen here approaching Bulli's lattice post home signal on 5 February 1960.

R.K. Booth

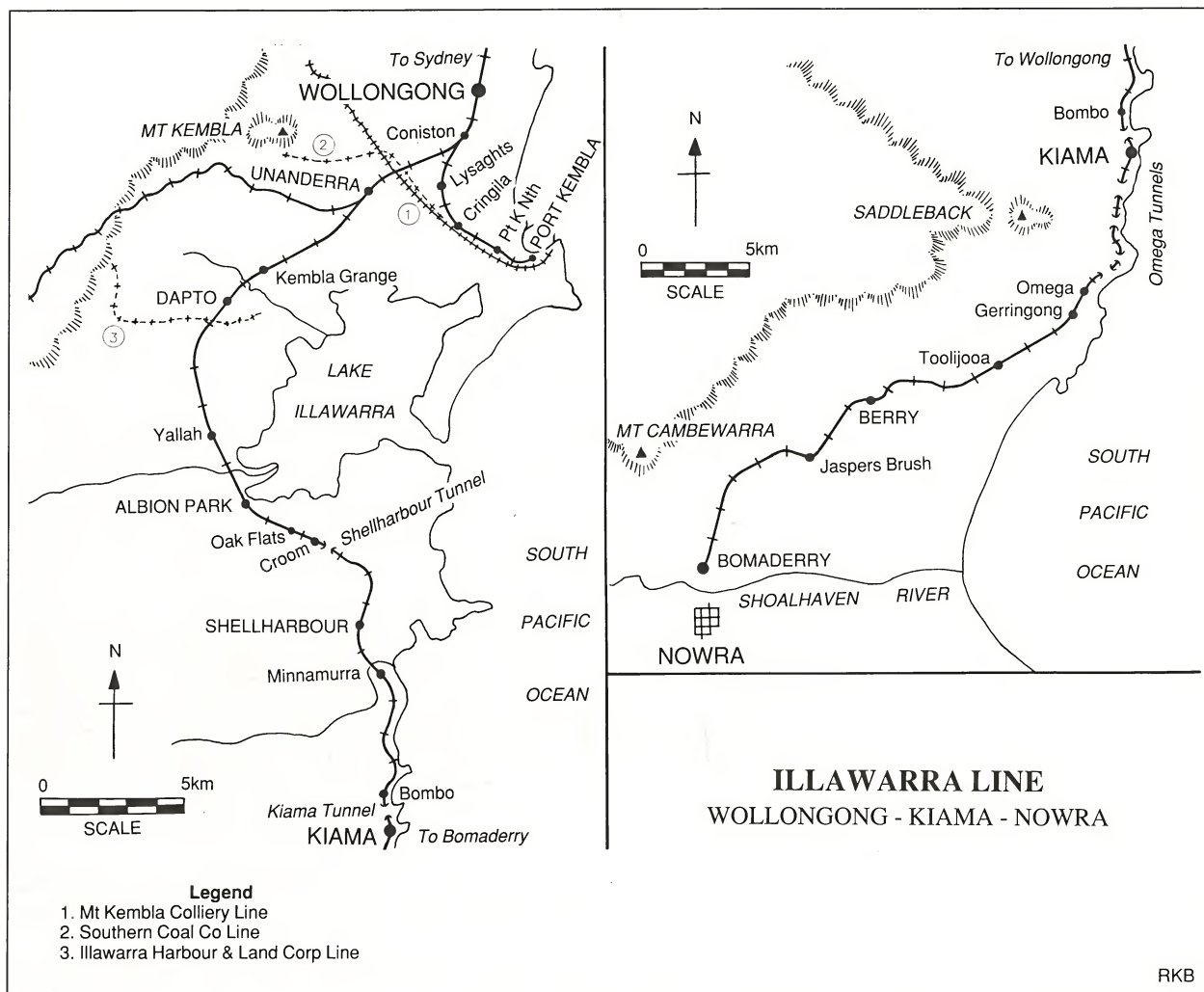


railway system. In steam days, blue metal ballast for Southern line destinations beyond Moss Vale was taken via the Unanderra-Moss Vale line, the necessary loaded wagons having been shunted off at Wollongong yards.

A fairly regular set of trains ran between Thirroul yards and Bombo to be loaded with blue metal. One of these trains, No.105, also took any goods loading from Thirroul to Kiama. Engines off down empty blue metal trains ran into Kiama for water and turning. Loaded up trains were marshalled in the quarry sidings and then propelled to the refuge loop at Bombo for wagon number getting and brake test. A special feature of steam working

at Bombo was that up trains reversed in the Kiama direction until almost all the load was inside Kiama tunnel and the engine just on the northern side. The crew had the Bombo-Kiama staff for this move. Once a good fire and full boiler pressure had been achieved, the train charged forward to make a run at the 1 in 50 grade on the northern side of Bombo beach. The Bombo signaller had the uncertain task of hand exchanging the Shellharbour staff for the Kiama one as the engine bucked and swayed past the platform. With Bombo beach as a background, the whole procedure was a memorable event in Illawarra steam working.

The Bombo 1 in 50 grade and the steeper 1 in 44



at the top of Shellharbour bank limited through loads to 565 tons for a single Standard Goods engine. This is quite a high tonnage for such grades, but the Bombo 1 in 50 was short and had the advantage of a running approach. The grade on Shellharbour bank had an easing in the middle. Just the same, the crew was pleased to see the engine dip its nose into the Shellharbour tunnel on such journeys. Double-headed blue metal trains were run when demand from the quarry was heavy.

Impressive, too, was the steam goods working on the Unanderra-Moss Vale line. The 1 in 30 climb to the Illawarra Range restricted the load of Standard Goods engines to 230 tons. Standard Goods engines were used exclusively on this work, trains being run with two and even three engines hauling 460 and 690 tons respectively.

Diesels had replaced steam on the Unanderra-Moss Vale goods trains before the Allans Creek triangle had been built. Loads for Moss Vale and beyond, therefore, were marshalled in Wollongong yards. Special arrangements for three engine working were devised so that crews did not exceed their permitted hours of duty. An engine ran light from

Thirroul to Wollongong where it went onto its already marshalled train. After the guard recorded the wagon numbers plus load and had made a brake continuity test, the train proceeded to Unanderra. Here the engine was run around the train and coupled to the rear of the brakevan. This engine then became the push-up or third engine of the train. In the meantime, a pair of light engines arrived at Unanderra from Thirroul and coupled onto the front of the train. The rear engine being coupled to the train became a part of the air brake system and, to achieve this, the driver isolated the brake valve. The driver of the second engine had already isolated his engine's brake valve at Thirroul, meaning that the driver of the first engine had sole control of the train's brakes.

Once the train was ready to depart and the electric train staff had been shown to the drivers of the front two engines but handed to the driver of the rear engine, an exchange of whistle codes sounded the departure of the train. Seventy-five minutes were allowed for the 12½ mile climb to Summit Tank.

The 1 in 30 grade commenced once the train



Thirrour was the starting point for goods trains heading southwards to Port Kembla, Bombo, Kiama and Nowra. 5617 has a good head of steam as it takes a goods train to Kiama. The tarpaulin-covered S and K wagons are for Kiama, while the BBW ballast wagons will be loaded at Bombo.

R.K. Booth

passed over the Princes Highway level crossing and any speed gained was soon dissipated as the three engines settled down to a steady plod. It was the firemen who had all the hard work, adding coal on the little and often basis. Between rounds they could momentarily enjoy some fresh air and keep an eye on the water gauge glass. The continuous curvature and dense forest gave only fleeting glimpses of the front two engines to the crew of the rear push-up engine.

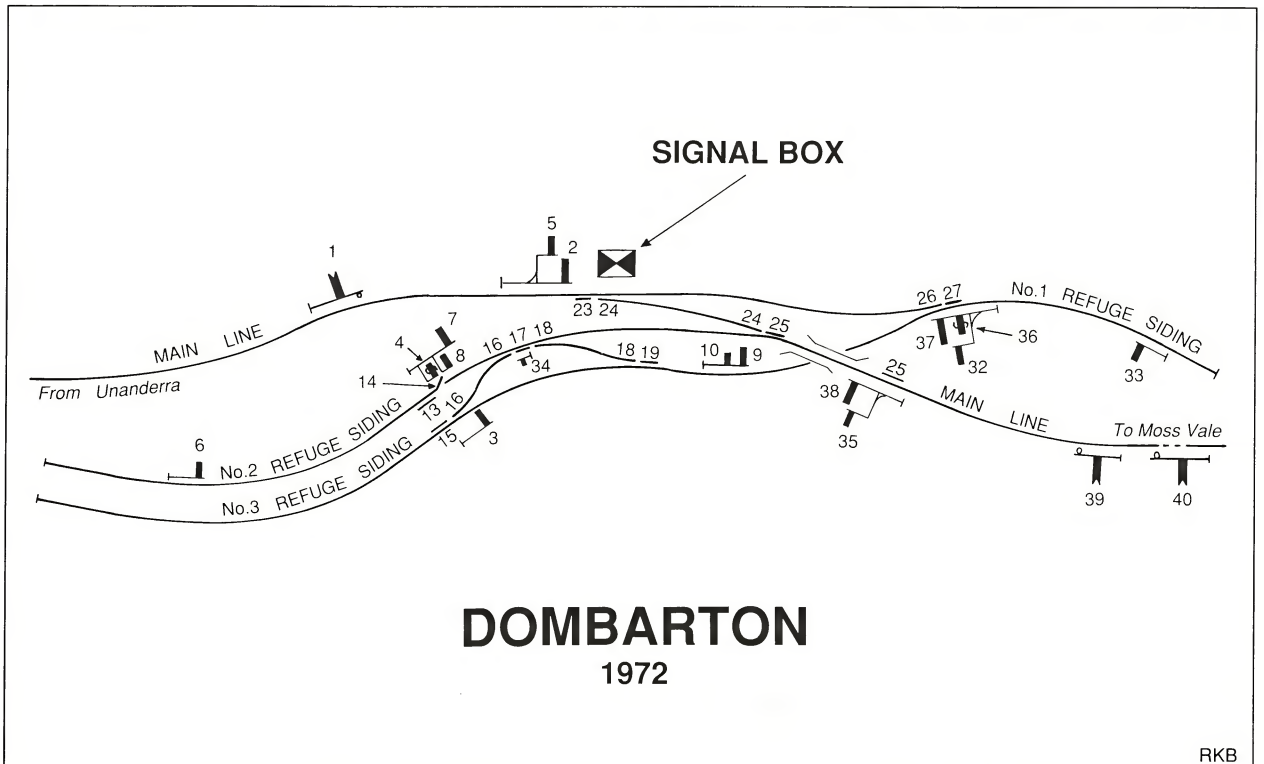
The drivers' interest increased as Dombarton's distant signal came into view. If at clear, the train was going to pass straight through; if at caution, the train was to be refueled to cross a descending train. Footplate conditions were quite bearable, despite the hard steaming, as the train climbed through tall shaded forest, but the short Illawarra Range No.1 tunnel was a hot one with plenty of smoke and fumes left by the first two engines for the crew of the third engine to endure.

Not long after the coastal panorama disappeared, the train's pace quickened as the grade eased temporarily to 1 in 120 through the Illawarra Range No.2 tunnel. Conditions inside the tunnel were quite tolerable compared to No.1 tunnel. The resumption of the 1 in 30 grade had all engines

working hard again, but, with only three miles to the top, the thought of a welcome cup of tea arose. Some drivers had a favourite lineside spring from which to fill the billy with crystal clear water. The train's progress was so slow that the driver could climb down the cab steps, run beside the engine, scoop up the water and climb back onto the engine. Not all drivers did this, of course, but the more daring thought the danger was compensated for by not having to use tender water to make their tea at Summit Tank.

At Summit Tank the train drew up with the front engine beside the water tank. The push-up engine uncoupled and reversed to the water column at the northern end of the loop. Once both front engines had taken water, they set off with the train climbing the 1 in 60 grades to Robertson. The push-up engine was then free to proceed to the turntable located almost on the scarp edge, to turn before running light engine back to Thirrour.

The front bank engine was removed at Robertson, allowing the train to complete its journey with a single engine. This bank engine ran tender-first to Summit Tank, where it was turned before resuming its journey to Thirrour. Sometimes a returning bank engine was coupled on the front of an up or



Left: The main tonnage hauled along the Illawarra line south of Wollongong is blue metal from the quarries at Bombo and Dunmore. 5215 hauling blue metal ballast from Bombo takes advantage along a brief easing of the 1 in 44 grade approaching Shellharbour tunnel on 27 June 1964. R.K. Booth

Right: Summit Tank was a stopping place for all goods trains after the 12½ mile climb graded almost entirely at 1 in 30. Three engines were needed for goods trains conveying 690 tons. The third engine pushed in the rear to Summit Tank only, leaving the front two engines to take the train to Robertson. 5450 + 5612 leave Summit Tank on 22 March 1958 with a train consisting of ballast and steel products.

R.K. Booth



5090 was a saturated member of its class and was employed for many years as Thirroul's shunter. This view, taken from Thirroul North signal box on 5 February 1960, shows 5090 dragging a train towards the up shunting neck. The dead-end signal bracketed to the right-hand signal post has been cleared for this move. Kirton's Excelsior Colliery is behind the engine. A BCH coal hopper which has just been loaded can be detected above the loco's boiler.

R.K. Booth

Allocation of Engine Classes at Thirroul

Year	13	18	19	20	26	30 Tank	32	50 Sat.	50+	53	Former PWD	Total
		(a)		(a)	(a)			(c)	(d)	(g)	(a)	
1917								23		1		24
1930			2			6		4	7	5		24
1940			3			8		1	7	4		23
1950	1	4	5(b)		1	9		1	5	1	4	31
1954		4	4(b)	3	3	8		1	6		2	31
1958		2	3(b)	1	5	8	2	1	6		4	32
1960		2	5(b)	5	5	6		1	4	2	3	33
1964		1	1(b)	2	1	7		1	3		1	20
1965			1(b)			7	3					8
Jul. 1965						1(e)						1
Jan. 1966						1(f)						1

Notes:

- (a) Engines used exclusively for shunting the wharves and industrial network at Port Kembla. Shedded at the former PWD depot at Reids Hill.
- (b) Engines on hire to private companies, especially to AIS for shunting at the steelworks, coke ovens and on its colliery lines.
- (c) The single saturated 50 class from 1940 onwards was the Thirroul yard shunter.
- (d) 50+ means a superheated 50 class.
- (e) Engine on loan for Moss Vale working. Shedded at Thirroul.
- (f) Engine on loan for Moss Vale working. Stabled at Wollongong.
- (g) Saturated engine in 1917; superheated engines in all other years.



Much of the signalling in the Illawarra was done by mechanical semaphores. Meanwhile, when Unanderra was remodelled in 1941, extensive use of electric signals was made, a feature normally associated with metropolitan Sydney and Newcastle at that time. However, the points and locks were mechanically operated, as can be seen from the point rodding. This view is looking north.

SRA



One of the purposes of constructing the Unanderra-Moss Vale line was to bring limestone from the quarry at Marulan South to the steelworks at Port Kembla. In steam days, four-wheeled vehicles such as S wagons and LCH hoppers were used to carry the mineral. 5601 waits at Moss Vale with a limestone train on 17 May 1958.

R.K. Booth

descending train at Summit Tank. This even happened with the passenger train, producing two engines and two carriages downhill. One of the authors had personal experience of this particular working in 1958. The front engine (a 50 class) had poor brakes and was being lightly steamed with the valves set in reverse while descending the 1 in 30s. The cylinder cocks were opened so that compression would not damage the engine. The driver of the train engine, a 30 class tank (3140, in fact) was not happy about the slow progress downhill and so nudged open the regulator to speed things up a bit. When the driver of the 50 class realised what was going on, the following verbal exchange between drivers took place (minus rude words):

1st driver: "You're pushing me."

2nd driver: "I want to get home tonight, not tomorrow!"

On the other hand, the descent of a fully laden goods train was a very serious business and 80 minutes were allowed to travel from Summit Tank to Unanderra. Hand brakes were applied to vehicles to control the descent when the air brakes were released and the auxiliary reservoirs were being recharged. Vehicles fitted with grade control valves

to retard the release of the air brakes lessened the need for hand brakes to be applied.

Much of the traffic heading from Moss Vale was limestone for the steelworks. This was conveyed in LCH and S wagons, which were left in the exchange sidings at Unanderra for the AIS engine to transfer to the steelworks.

The timetable provided for a bank engine released at Summit Tank to be turned again at Wollongong so that it could push a second train to Summit Tank. The turntable at Summit Tank was installed in 1953, but before this, the 1942 working timetable instructed that returning bank engines were to be attached, tender-first, behind the engine of a downhill train. It seems tender-first light engine running was discouraged, while night running without a headlight was prohibited on this line, a further discouragement to tender-first running.

60 class Garratts would have been used to great advantage on the Unanderra-Moss Vale line. The firemen certainly would have welcomed a mechanical stoker. It was not the single line tunnels which banned their use, as happened on other lines, since the tunnels were wider and had straight sides. The crew could then escape from the footplate in an

emergency. It was the inability of their brakes to hold a descending train assuredly that prohibited their use.

The Unanderra-Moss Vale line was an early candidate to have its goods trains exclusively diesel hauled. Greater tonnages and a saving in crews were the economic attraction. Also, there was difficulty in keeping sufficient water in the tanks at Summit Tank when several three-engine trains arrived in succession. Steam on the goods trains succumbed to the diesels in 1962.

The foregoing shows that the engines used for Illawarra working out of on Thirroul were the standard types: 30 class suburban engines, 32 class passenger engines, and 50, 53 and 55 class goods engines. This is reflected in the allocation of engines to Thirroul depot throughout its life. The total number of engines remained fairly constant for almost

40 years.

Some examples of earlier engine transfers to and from Thirroul are listed as follows:

- In 1920, TF1170 (5457) and TF1097 (5436) were sent to Thirroul replacing TF1099 (5438) and T610 (5060) to come to workshops.
- In 1927, 5155 (saturated) was allocated to Thirroul, replacing 5440 which was sent to Eveleigh depot.
- In August 1932, additional engines for working the newly opened line to Moss Vale were sent to Thirroul: 5037 (ex Lithgow), 5359 (ex Enfield) and 5444 (ex Bathurst).

The total stock of engines at Thirroul was insufficient for all the depot's work and engines from other depots, especially Eveleigh (32 class) and Enfield (50, 53 and 55 class) worked in company with Thirroul engines. This is borne out by two sample observations, as set out in the table at left.

The NSW Railways took over from the PWD all the shunting on the wharves and industrial sidings at Port Kembla in 1949. Most of the PWD engines at Port Kembla became NSW Railways' stock. One of these engines, PWD 80, formerly NSW 2002, had been purchased second-hand from the NSW Railways by the PWD in 1940 and so reverted to its former owner in 1949, but it did not resume its previous number.

The PWD continued maintaining the eastern breakwater after 1949 and retained several of its engines for this purpose. One of these, PWD No.75, was formerly 1802 on the NSW Railways stock and so was never returned to the Railways.

The NSW Railways were not happy with the age and condition of many of the boilers on the engines they inherited from the PWD. They substituted engines of their own for Port Kembla shunting duties in 1949, namely 1801, 1805, 1806, 2019, 2604 and 2613. At the same time, PWD 28, 29 and 80 were sent to Eveleigh works for overhaul, followed by PWD 79 later in the year. A typical allocation of engines to Reids Hill under NSW Railway auspices is shown in the accompanying table, below.

The engines shunting the former PWD network at Port Kembla were listed nominally under Thirroul's allocation from 1949 since the Thirroul DLE was now responsible for them. However, the engines still operated out of Reids Hill depot at Port Kembla and only ventured to Thirroul for repairs which could not be done at Reids Hill. They were sent to Eveleigh for any major work. The NSW Railways accepted the former PWD men into their

Samples of Engines Seen at Thirroul

28 December 1959		9 June 1962	
1931	Eveleigh	1915	Thirroul
1941	Eveleigh	2033	Reids Hill
1958	Eveleigh	2611	stored
PWD80	2002, stored	2617	stored
2601	stored	3045	Thirroul
3045	Thirroul	3077	Thirroul
3077	Thirroul	3113	Thirroul
3097	Thirroul	3136	Thirroul
3113	Thirroul	3140	Thirroul
3140	Thirroul	3295	Eveleigh
3230	Eveleigh	5090	Thirroul
3244	Eveleigh	5051(a)	Thirroul
3252	Eveleigh	5173	Thirroul
3277	Eveleigh	5205	Enfield
3295	Eveleigh	5273	Thirroul
5051(a)	Thirroul	5359	Thirroul
5056	Enfield	5417	Thirroul
5090	Thirroul	5605	Enfield
5159	Enfield	7010(b)	Thirroul
5165	Enfield		
5173	Thirroul		
5192	Thirroul		
5223	Enfield		
5234	Enfield		
5243	Enfield		
5274	Enfield		
5341	Enfield		
5359	Thirroul		
5373	Enfield		
5417	Thirroul		

Notes:

- (a) 5051 was transferred to Thirroul along with 5095 and 5062 in 1925. The engine subsequently spent time at a number of other depots, but in 1942 it was sent back to Thirroul where it stayed until 1964.
- (b) The 70 class diesel-hydraulic shunters were allocated to Thirroul as early as 1962. By July 1964, all ten of the 70 class were at the depot.

Reids Hill Allocation

28	1805	2001	2604
29		2022	2609
79		2025	2611
		2032	2613
		2033	2617
(80 and 2601 stored at Thirroul also)			



An engine with a long association with Thirroul depot was 5051, which was allocated here from 1941 to 1964. The 1 in 44 Shellharbour bank has slowed the pace of a loaded blue metal train from the Railways' own quarry at Bombo. 27 June 1964.

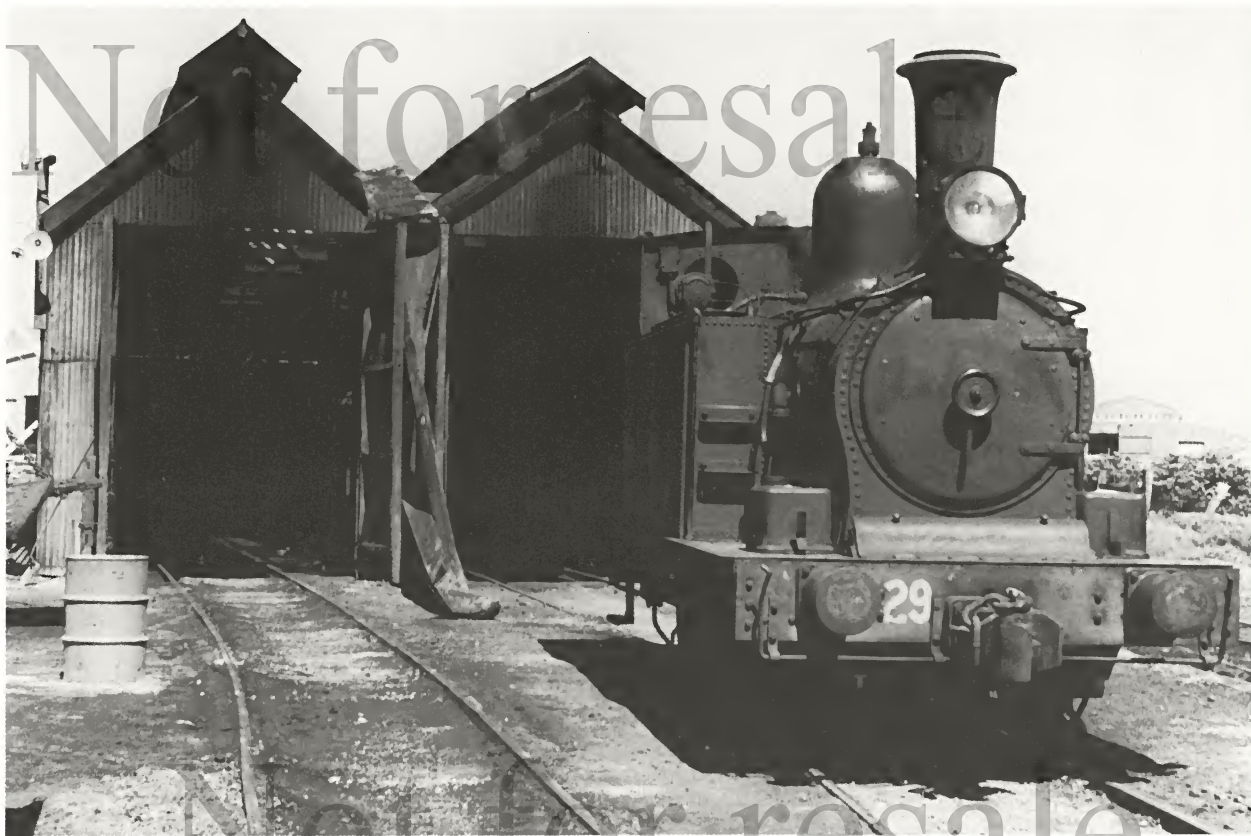
R.K. Booth

Repairs Made at Thirroul, December 1957

3027	stopped 5/12/1957	stays blowing	incomplete at 7/12/57
3273	stopped 28/11/1957	tubes	complete 2/12/57
3232	stopped 2/12/1957	tubes	complete 3/12/57
3255	stopped 1/12/1957	big-end bolt defect	complete 2/12/57
5041	stopped 5/12/1957	bogie radial arm broken	complete 6/12/57
5051	stopped 3/12/1957	tone-up	incomplete at 7/12/57
5143	stopped 1/12/1957	cylinder cocks to renew	complete 2/12/57
5153	stopped 1/12/1957	gauge column defect	complete 2/12/57
5362	stopped 1/12/1957	crosshead cotton loose	complete 2/12/57
5616	stopped 30/9/1957	tone-up	complete 5/12/57
5707	stopped 1/12/1957	broken spring link	complete 3/12/57.

Selection of Repairs Made at Thirroul

May 1958	PWD No.79		tone-up and intermediate boiler test
7/2/1959	PWD No.29	stopped 6/2/59	bunker repairs
1/3/1959	PWD No.79	stopped 24/2/59	tone-up and intermediate boiler test
1/8/1959	2609	stopped 16/7/59	tone-up complete 31/7/59
5/9/1959	3509	stopped 29/8/59	firegrate burnt.
(The mention of 3509 shows an engine well out of its territory)			



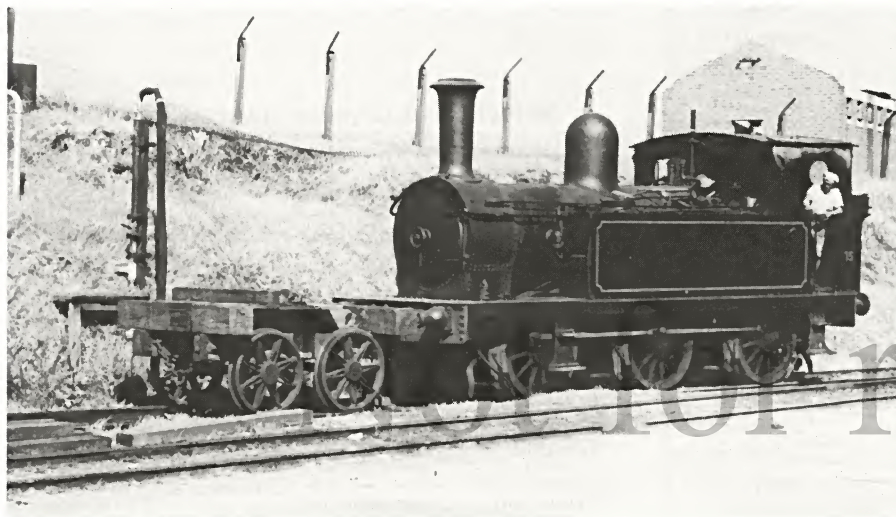
The Public Works Department opened a locomotive shed and workshop at Reids Hill, Port Kembla in 1901 in connection with its construction and maintenance of breakwaters to provide safe anchorage for ships. These facilities were used later for PWD engines shunting exclusively the industrial network of lines in the vicinity of the wharves. Former PWD engine No.29 stands outside Reids Hill depot.

R.K. Booth

own staff, but these personnel continued in their former duties at Port Kembla only. Light engine movements for repairs at Thirroul and Eveleigh were performed by Thirroul crews. Similarly, Thirroul crews ran hired 19 class engines between Thirroul and the AIS exchange sidings at Cringila

when making transfers.

An indication of the repairs made to engines at Thirroul can be obtained from the monthly returns for engines stationed there. Fortunately, some of these returns are in archival records and reveal that usually 10 to 12 engines per month received repairs



The first 18 class used at Port Kembla was 1802 when it was sold to the PWD in 1927 and renumbered in its stock as No.75. When the NSW Railways took over all the shunting at Port Kembla in 1949, the PWD retained No.75 for its own use in maintaining the eastern breakwater and so the engine never returned to the NSW. This 1960 view shows No.75 coupled to a short four-wheel wagon which conveyed cast concrete blocks to the breakwater. Note the tank and stand pipe for watering locos.

R.K. Booth



Above: 2604 was the second last of its class to survive in NSW Railways' service and spent some time as a shunter at Port Kembla. It was fitted with automatic couplers and an electric headlight for these duties. The 26s were the only class of engine to retain two single-tone whistles, a relic of pre-1925 practice. The Reids Hill breakdown train is behind the engine. 2604 finished its days at Bathurst, a long-time haunt of the class.

R.K. Booth

Right: When the PWD first provided locomotives at Port Kembla they were all of the 0-6-0 tank engine type. PWD 28 was built by Hudswell Clarke in 1908 and was placed in service at Port Kembla on 13 March 1909. No.28 carried "Kembla" nameplates which it retained under NSW Railway ownership until 1960. The NSWRL replaced the original boiler in 1949 with one of the type fitted to their 18 class, causing the Hudswell Clarke appearance to be lost.

R.K. Booth



at Thirroul. Engines dealt with were Thirroul's own, plus engines from other depots which developed defects while working in the local area. The return for the month preceding 7 December 1957, listed on page 75, has been chosen as a sample of the repairs performed at Thirroul.

Some selected repairs which have been extracted from other returns are set out for interest in the accompanying table, also on page 75.

Thirroul did see a number of engine classes which were never allocated there. The 57s are the best remembered example. 5701 made its first revenue-earning trip to Thirroul on 6 November 1929. The 57s were regularly employed between Enfield and Thirroul until 1961. They were rostered for return runs from Enfield and were permitted no more than 90 minutes to be serviced at Thirroul before taking an up train. 5711 was the last of its class to work to Thirroul.

Sometimes express passenger engines were pressed into goods service, which brought the occasional 35, 36 or 38 to Thirroul. When the air-conditioned HUB set was introduced on the South Coast Daylight express in 1949, the 310 ton load was too heavy between Sydney and Waterfall for the traditional 32 class and a 38 was used to and from Thirroul. The 38 handed over the train to a trusty 32 class for the Thirroul-Nowra section, where the wooden bridges would not permit a 38 and the turntables were too short. Sometimes a 36 was used instead of a 38.

From 1958, the early morning paper train (No.9 mixed) brought a 36 into Thirroul and this engine returned to Sydney on No.98 passenger. In the early 1960s, the load of ten cars on No.135 (5.12pm commuter train from Sydney) was causing its 32 class problems in restarting after signal checks on Como bank and a larger 36 or 38 class engine was used instead. A sudden engine shortage saw a 35 class used on one occasion. The following No.137 fast passenger to Nowra was also hauled by a 36 or 38 during this period if the train was over load for a 32 class. These arrangements saw an increasing number of 36s and 38s being serviced at Thirroul but, at the most, only in ones or twos. Some, but not all, Thirroul men were qualified for 36, 38 and 57 class engines. Wollongong men were qualified for 36s, but not 38s or 57s.

Engines, new and converted, were often given load trials to Thirroul. The first of the 55 class converted to burn oil, 5502, made its first trial with a train to Thirroul on 1 October 1946. Many of the 59 class, which were introduced as oil-burners in 1952/1953, were given load trials to Thirroul when placed in service. However, the 59s, either as oil burners or in their converted coal burning form, never worked to Thirroul on a regular basis.

The demise of steam occurred slowly at first, following the introduction of the 40 class diesel electric engines in 1951. These took over some of the Enfield-Thirroul goods trains and were given selected runs to permit a quick turn-around at



All six of the 18 class 0-6-0 tanks were used at Port Kembla at some time or other but the whole six were not necessarily there simultaneously. 1805 shows the final form of the class having automatic couplers, electric headlight and a steam driven turbo-generator. The photograph was taken beside the coal stack at Reids Hill.

R.K. Booth

Sister engine to PWD No.28 was No.29, which was similarly reboilered with NSW standard components in 1949. Hudswell Clarke built this engine in 1912 and it commenced duties at Port Kembla the next year. Unlike 28, it was never named. No.29 makes a smoky arrival at Reids Hill. R.K. Booth



Hunslet supplied an additional engine to the PWD in 1938 for shunting at Port Kembla. It was an 0-6-0 saddle tank and numbered 79 in the PWD listing. It, too, was taken over by the NSW Railways in 1949 and, apart from the fitting of automatic couplers and an electric headlight, it remained largely as built. R.K. Booth



The last 18 class to be sent to Port Kembla was 1076, formerly 1804, but renumbered in the miscellaneous 10 class when it was converted to a coal grab crane engine in 1937. Upon conversion back to original form, the earlier number was not reinstated. Note how the short boiler required the turbo-generator to be mounted on top of the side tank. R.K. Booth



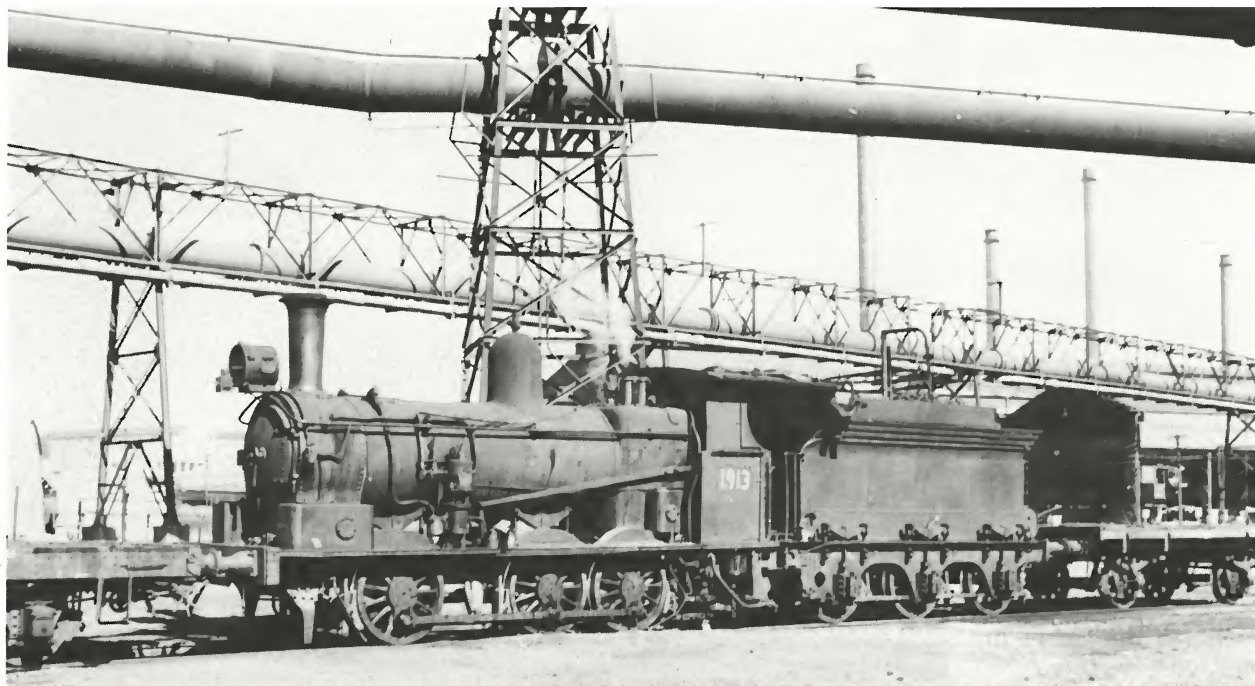


By the late 1950s 36 class engines commenced to appear more regularly on the Illawarra line. No.98 passenger from Wollongong to Sydney was used to return the 36 class engine which had brought down the early morning paper train. 3653, which was commonly seen on this run, heads No.98 past Thirroul yards on 4 January 1964. The newly outshopped LUB set is one car short of its normal complement and an FR has been added at the front as a temporary substitute.

R.K. Booth

The NSW Railways leased a number of their 19 class 0-6-0 tender engines to Australian Iron and Steel for shunting its various works at Port Kembla or for hauling coal from its own mines. 1913 pauses between shunting duties at the AIS cokeworks, Cringila.

R.K. Booth





The first displacement of steam by diesels on the Illawarra occurred with the introduction of the 40 class late in 1951. The 40s were given selected runs between Enfield and Thirroul to ensure a quick turn-around. 4013 heads No.406 goods from Thirroul through Wombarra in December 1963. The train is a block load of steel products being conveyed in tarpaulin-covered wagons.

R.K. Booth

Many engines were given load trials to Thirroul either when first delivered from the manufacturers or after an overhaul in workshops. Parkes-based engine 4904 made a rare run to Thirroul on 15 January 1964 after a visit to the workshops. It was photographed on its return journey north of Austinmer.

R.K. Booth





In December 1964 steam made a brief return to the Enfield-Thirroul goods trains, often employing 36 class engines instead of the more usual Standard Goods types. 3649 works No.23 down pick-up goods beneath the towering Illawarra escarpment at Scarborough on a day made hazy by bushfire smoke. 22 December 1964.

R.K. Booth

Thirroul. Single units entered the roundhouse to be turned, as was done for the 42 and 43 class engines which followed the introduction of the 40s. Double units did not need to go to the turntable and simply uncoupled from a goods in the down yards at Thirroul and shunted onto an already-marshalled train in the up yards. It was little surprise that the diesel operation statistics looked so good. Steam was starting to get the leftovers!

The 49 class made trials on the South Coast and occasionally one would venture to Thirroul following an overhaul. The increasing number of 44 class units in the early 1960s made heavier inroads into the Enfield-Thirroul working and displaced steam entirely from the Unanderra-Moss Vale goods trains in 1962.

The 70 class diesel-hydraulic engines were designed specifically for Port Kembla shunting and transfer work, and they soon displaced the best collection of steam veterans to be seen anywhere in the state. Thirroul looked after the 70s briefly until a new depot for them was built at Port Kembla. This signalled the end of Thirroul in more ways than one. Not only was steam to be entirely displaced, but the new centre of operations on the Illawarra was to be

located at Port Kembla, from where most of the freight traffic was now originating.

1964 was set as the year to sweep aside steam from the Illawarra. On 1 January 1964, the 70 class, now based at the new diesel depot at Port Kembla, commenced the takeover of shunting in the Port Kembla area. In just over a month, on 7 February 1964, the steam shed at Reids Hill closed, with 2-6-4 tank 2029 being the last departure. New 48 class diesels scheduled for delivery that year were to take over the remaining steam operations on the Illawarra but delays in their arrival saw some steam last until 1965. There was a brief revival of steam working on the Enfield-Thirroul goods trains in December 1964 with some highly unusual engine combinations for the Illawarra, including 36 + 38, 53 + 36 and 36 + 36.

By mid 1964, eleven steam locomotives were still allocated to Thirroul but during the last months a number of engines were transferred away, including the three superheated 50 class, namely 5051, 5173 and 5273. A sole 19 class, 1915, was still on hire to AIS for working its Bulli Colliery line in 1965, while seven 30 class tank engines remained at Thirroul. Two were transferred away in March

Not for resale



The last 19 class to work in the Illawarra was 1915 which transferred coal wagons between the AIS-owned Bulli Colliery and the Bulli Exchange Sidings. This photograph was taken in May 1963 and the engine continued in these duties until early 1965.
R.K. Booth

1965, followed by 3076, 3077, 3093, 3134 and 3137 in April. Incidentally, 3137 was one of the so-called 'super' 30 class, because of its raised boiler pressure and enlarged cylinder diameter. By May 1965, all locomotives had been transferred. Thirroul serviced an engine for the last time on 5 June 1965. The official closing date of Thirroul depot is shown in the records as 6 October 1964, even though some steam locomotives and enginemen worked out of the depot for some months after that.

The Moss Vale passenger made uneconomic use of an engine because of the overnight stay at Moss Vale. After Thirroul lost all of its 30 class in April 1965, an Enfield engine, 3076, was loaned to Thirroul for the Moss Vale passenger service. This engine worked light to Thirroul for servicing after returning to Wollongong. Once the depot was closed in June, the servicing was done at Wollongong. Even Enfield was running short of 30 class tank engines to send to Wollongong at times and despatched a tender version, 3014, on 30 April 1966 for the Moss Vale run. The 30 class supplied consecutively by Enfield for varying periods were 3093, 3034, 3077, 3136, 3137, 3127T, 3076, 3025, 3014T and 3097. A rail motor replaced the steam service on 20 February 1967. History, in a sense, repeated itself in that the rail motor was difficult to dislodge also, making

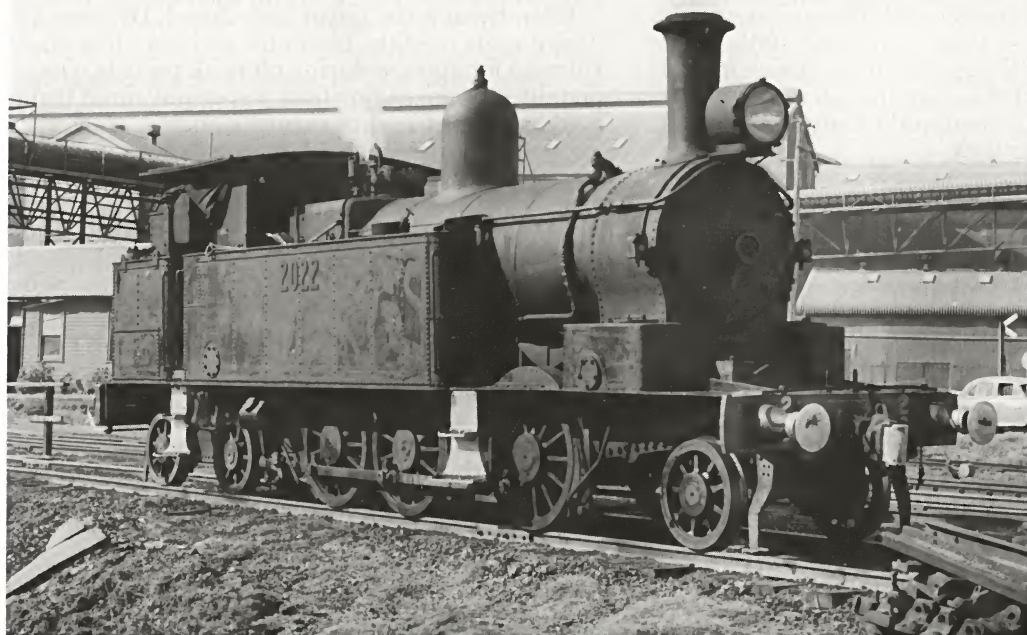
the Wollongong-Moss Vale passenger the last regular use of a rail motor in NSW. The Railways took the easy way out on this occasion by running a bus instead of a train.

Even though the depot was closed, the new 48 class diesels used the turntable and roundhouse at Thirroul for storage during off-peak periods. Occasionally a steam engine from a specially hired train would visit Thirroul to turn the engine. However, the turntable commenced to deteriorate in 1970, resulting in progressively increasing load restrictions being imposed. Tenders were called in July 1970 for the purchase, demolition and removal of the roundhouse, sand bin, elevated coal bunker and approach span at Thirroul. This work was completed by June 1971. On 8 December 1971, tenders were called for the purchase, demolition and removal of the turntable, power collector arch and control cabin. Another tender was called at the same time for the demolition of the walls of the turntable pit and for filling plus levelling of the site. The DLE's office was the last structure to go, tenders for its removal being received on 8 November 1972. So, 55 years after its opening, almost all of the evidence of a large steam depot disappeared.



Thirrour engine 5269 standing at the coal stage at Thirrour loco on 15 December 1958 with 3207 in background.

I. Wallace



A number of 20 class 2-6-4 tank engines were sent to Port Kembla in their final days for shunting duties. 2022 passes between shifting rakes of wagons at Port Kembla. Sister engine 2029 was the last to leave Reids Hill depot.

R.K. Booth



The improvement in grades on the Illawarra made in the 1915-1920 period required some expensive deviations of the line. The deviation at Stanwell Park eliminated the notorious Otford tunnel and was the last to be constructed. 5441 + 3662 climb upgrade at Stanwell Park towards the Bald Hill tunnel with No.52 goods from Thirroul to Enfield on 22 December 1964 during a brief revival of steam.

R.K. Booth

Stations in the Illawarra

A feature of the Illawarra line at the peak of its development was the number of closely separated stations between Scarborough and Wollongong serving numerous small villages which sprang up along the narrow coastal strip. Before detailing these, however, the use of the names Clifton, Scarborough and Coalcliff needs clarification.

Clifton is the name of a small village, which originally housed miners who worked in the Coalcliff mine. This mine's tunnel opened directly to the sea below the present cliff drive just to the north. A wharf for the loading of small colliers projected into the sea from the mine entrance. A steep track down the cliff was the sole access to the mine, which commenced operations in 1878. When the railway was opened in 1887, the station and goods yard serving the area were located several kilometres south of the village of Clifton since this was the first available space for such facilities in an area of very steep topography. This station was originally called *Clifton*, but changed to *South Clifton* on 3 October 1888 when a miners' platform serving the village of Clifton was opened as *North Clifton*. The latter name was short-lived and changed to *Clifton* on 1 January 1889.

South Clifton was changed to *Scarborough* on 1 October 1903 and at the time was positioned 1 km south of the present Scarborough station. As a lead-up to duplication works, the site of Scarborough station was moved to its present position and opened as *Clifton* on 15 August 1915, on which date the Clifton miners' platform just to the north was closed. However, the new station was quickly renamed *Scarborough* on 21 January 1916. The word Clifton disappeared from railway station names until 1934 when the miners' platform was reopened as *Clifton*.

The nearby 1002 metre long tunnel which pierces the escarpment was called the *Clifton Tunnel* and this has always been its proper title. Unfortunately, it is also referred to as the Coalcliff tunnel and the Scarborough tunnel, even in official publications, all adding to the confusion in nomenclature.

The name Coalcliff does not enter the railway language until about 1910 when a siding serving a recently sunk shaft was opened. This shaft superseded the original tunnel access (adit) in the nearby ocean cliff face. *Coalcliff Signal Box* was opened on 27 September 1910 to control the newly-opened crossing loop and colliery sidings. The platform *Coalcliff* was opened in 1920 in association with the duplication of the line. Miners working in relocated Coalcliff mine were provided with a platform called *Miners' Platform* in 1911 but renamed *Coalcliff South* in 1926. Coalcliff South was 1 km south of Coalcliff platform.

Coalcliff has been used out of its railway historical context in the foregoing article so that the reader can be sure of the location being described. Proudfoot & Logan's contract commenced at a point just north of the present Coalcliff platform.

The Illawarra Line

<i>Clifton</i>	Miners' platform above the village of Clifton. Opened 3/10/1888 on down side. Name changes detailed above.	<i>Thirrourl</i>	Opened as Robbinsville 21/6/1887; station with wooden building on down side. Changed to Thirrourl 1/11/1891. New up platform with standard brick building provided for duplication on 14/11/1915. Buildings for Control and telegraph office opened on up platform 1918. Back platform road opened 27/2/1938.
<i>Scarborough</i>	Opened as Clifton 21/6/1887; changed to South Clifton 3/10/1888 then to 1st Scarborough 1/10/1903. Platform on down side with wooden station buildings. 1st station closed in 1915 when new station with wayside platforms		
<i>Wombarra</i>	Opened 12/2/1917	<i>Bulli</i>	Opened 21/6/1887 with crossing loop and goods siding. Original wooden station building on present down platform. Up platform with standard brick building opened with duplication in 1923.
<i>Coledale</i>	Opened July 1902 principally to serve miners. 1st platform on down side. Replacement platform a little further north when crossing loop was opened in 1906. Present island platform with brick building was opened in 1912	<i>Woonona</i>	Opened 25/8/1919; platform on up side. New down platform for duplication 20/5/1923.
<i>Austinmer</i>	Opened 1/9/1887; single platform on down side. New up platform for duplication in 1915 when platforms were brick faced. Timber station buildings	<i>Bellambi</i>	Opened 1889 with platform on down side. New island platform in 1913 having up and down working for local duplication.
		<i>Corrimal</i>	Opened 21/6/1887 with platform on up side. Crossing loop 1904. New down platform and buildings for duplication of line 27/5/1923. Wooden station buildings.
		<i>Towradgi</i>	Opened with two side platforms in 1948.
		<i>Fairy Meadow</i>	Opened as Cramsville in 1887; single platform on down side. Name changed to Para Meadow 1888.

North Wollongong Opened as two wayside platforms on 19/7/1917. Line had been duplicated locally in 1913.

Wollongong Opened 21/6/1887 with 400' (122 metre) platform on down side. Brick station building. Dock at southern end of platform; crossing loop provided. Contractor for station building was Alex Scoulter. Refreshment rooms added 1890

Coniston Opened as Mount Drummond on the branch line to Port Kembla on 1/4/1916. Closed 1923; reopened and changed to Coniston on 1/11/1925. Moved to a new site further north on 20/5/1941 when two wayside platforms were provided.

Unanderra Opened 9/11/1887 with platform on down side of line. Short back platform opened 1924.

Kembla Grange Opened 1/1/1890 with platform on down side.

Dapto Opened 9/11/1887 with platform on down side. Timber station building.

Yallah Opened as Albion Park 9/11/1887; changed to Yallah 1888. Platform on up side; timber building. Closed 19/10/1974.

Albion Park Opened as Oak Flats 9/11/1887; changed to Albion Park 1888. Platform on up side; timber building.

Oak Flats Opened as a milk stage on up side in 1890. Passenger platform opened 9/3/1925.

Croom Opened as a cream stage on down side in 1890. Passenger platform 19/6/1938. Closed 1/7/1950. Located on Wollongong side of Shellharbour tunnel which consequently has been given the unofficial name of Croom tunnel.

Shellharbour Opened 9/11/1887. Wooden station building; platform on down side.

Minnamurra First platform costing £45 was on up side of line near the Wollongong end of the Minnamurra viaduct and was opened 23/12/1891. Moved 1 km to Kiama side of viaduct on 10/10/1943 to serve greater population numbers there. Platform on down side.

Bombo Opened as North Kiama 9/11/1887 and was the terminus of the Illawarra line until 2/6/1893. Platform on up side. Changed to Kiama 1/5/1889

Kiama Opened as an island platform and crossing loop 2/6/1893. Large brick station building

Omega Opened 2/6/1893 with platform on up side. Closed.

Gerringong Opened 2/6/1893 with platform on down side. Original timber station building destroyed by fire and replaced with a brick building.

Toolijooa Opened as Toolejooa on 2/6/1893

Berry Opened 2/6/1893

Jaspers Brush Opened 2/6/1893

Nowra Opened as Nowra/Bomaderry 2/6/1893

Port Kembla Branch

Mount Drummond Opened 1924. Platform on down side of Port Kembla branch only. Closed 1923 but reopened as Coniston in 1925. Became an Illawarra line station in 1941 when two wayside platforms were opened.

Haig's Platform Opened 1920. A platform built of sleepers long enough for two cars

Lysaghts Opened 30/5/1938 for Lysaghts works employees. Platform on up side; new down platform for duplication in 1941.

Cringila Opened 16/4/1926 for steelworks employees. New island platform with brick station building opened for duplication in 1941.

Port Kembla North Opened in 1936. Platform on down side.

Port Kembla Opened 15/1/1920. Platform on up side.

Unanderra-Moss Vale Line

Mount Murray Opened 20/8/1932; closed 19/11/1976. Standard P1 type station building.

Ocean View Opened 8/1/1936; closed 6/7/1968.

St Anthonys Opened as Ranelagh 9/1932; changed to St Anthonys 2/1948; closed 19/10/70.

Robertson Opened 20/8/1932 having a standard P3 type station building.

Burrawang Opened 20/8/1932; closed 9/3/1975. Standard P1 type station building.

Calwalla Opened 20/8/1932; closed 8/1/1976. Standard P1 type station building.



Above: Enfield engine 5344 and its Wampu tender are swaying from side to side as No.675 goods takes a run at Beecroft bank, building up speed down the 1 in 75 grade between Epping station and the Devlins Creek crossing. The fireman is laying a good fire in 5344, necessary for the ensuing hard working to Pennant Hills. Composed substantially of vehicles for conveying perishable goods, No.675 originated at Darling Harbour and was destined for Broadmeadow yards. It was commonly hauled by a 60 class Beyer-Garratt but, on this day, its load was within the capacity of a Standard Goods locomotive. Saturday afternoon, 1 August 1959.

All photos by author unless noted.

Right: Former Casino engine 3506 makes a fine sight as it ascends Beecroft bank at Cheltenham on Saturday morning, 2 May 1959 at the head of No.25 Newcastle passenger which departed Sydney at 9.40am on Saturdays. At this time 3506 was based at Broadmeadow depot, and is hauling a load of eight American suburban cars and EHO van.

Below: On a sunny but cool winter's morning, the silence at Cheltenham is shattered by 3812 stamping up the steep grade with the eight-car RUB set of No.23 Northern Tablelands Express. Saturday 1 August 1959.





BEECROFT BANK

Ian Wallace

Beecroft is an attractive suburb on the main northern railway line almost 17 miles by rail north west of Sydney. One of its principal attractions is its bushland setting in the hilly country north of the Parramatta River. In *Byways of Steam 3*, I commenced an account of my experiences of steam working on the "Short North", referring particularly to Eastwood bank, a stretch of about one mile of 1 in 40 grade between West Ryde and Eastwood railway stations. This was a favourite location for photographing steam trains, particularly during the period November 1958 to January 1960. It was possible here to see steam locomotives working really hard as they ascended the bank.

There were two other significant stretches of 1 in 40 grade against down trains between the Parramatta River bridge and Hornsby which required skill and effort by crews to negotiate. The section of 1 in 40 grade about one mile long commencing at the crossing of Devlins Creek between Epping and Cheltenham stations and extending to several hundred yards beyond Cheltenham station, followed by a further mile of 1 in 50 grade to beyond Beecroft was commonly known as Beecroft bank. This climb continued to Pennant Hills station. Beecroft bank was a severe test of engine and crew,

as it was a steep climb of more than two and a half miles. The stretch of 1 in 40 grade, slightly more than half a mile long between Normanhurst and Hornsby, was less of a problem for crews because of its relatively short length and because it was preceded by a significant section of downhill running through Normanhurst.

Beecroft bank was also a favourite venue for my steam train photography, particularly in 1959, prior to electrification of the line to Gosford in January 1960. This was because engines on down trains were working hard and because of the bushland setting near Cheltenham which I found appealing. This article describes some of my experiences of steam working on Beecroft bank. In an attempt to gain an insight into the problems faced by engine crews in steam days between Strathfield and Hornsby, I spoke with a driver who fired and drove both goods and passenger services on the Short North during the mid-to-late 1950s.

The historical development of the line between Meadowbank and Hornsby, based on the work of C.C. Singleton in 1965, was presented in the article entitled "Eastwood Bank" in *Byways of Steam 3*. Reference to the accompanying gradient diagram shows that down trains, after ascending Eastwood



This old post card shows an S class 4-6-4 side tank locomotive at the head of a six car American suburban set, arriving at Cheltenham station with a down suburban passenger train. It is likely the photograph was taken around 1910.

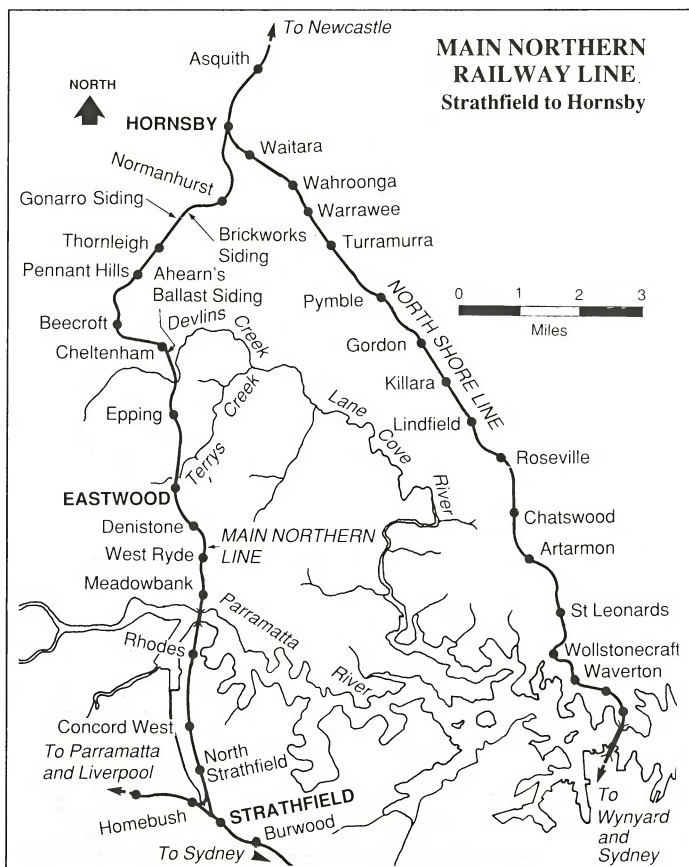
I. Wallace Collection

bank and passing through Eastwood station on the level, face adverse gradients of 1 in 75, 1 in 55, then 1 in 44 to Epping station which, again, is on the level. Beyond Epping station there is a relatively long downhill section of 1 in 75 until the line crosses over Devlins Creek on a high embankment, then the 1 in 40 grade of Beecroft bank commences and continues to several hundred yards beyond Cheltenham

station. The grade eases only slightly to 1 in 50 through Beecroft station and continues to climb at 1 in 75, then 1 in 55 and 1 in 44, to Pennant Hills station which, again, is on level ground. Pennant Hills is regarded as the top of the main climb though there are still short sections of relatively steep grade, particularly the 1 in 40 between Normanhurst and Hornsby.

Cheltenham station is located on a large sweeping curve of about 30 chains radius in the midst of the 1 in 40 grade. According to C.C. Singleton, Cheltenham station was the scene of numerous "fireworks" displays with the old S class 4-6-4 side tank locomotives on slippery rails trying, sometimes vainly, to restart an eight-car suburban set on the down journey. When the main northern railway line was opened to Hornsby in 1886, Cheltenham station did not exist, it being opened on 10 October 1898 as an unattended station with two side platforms. It has been related that, in the early days of the line, locomotives used to take water at Devlins Creek, Epping, pending the completion of the Ryde supply. This was when the embankment over Devlins Creek was much lower than it is at present.

Beecroft station existed at the time of opening of the line, but was located 10 chains nearer Strathfield than at present. It was constructed as a brick-faced platform on the down side. Some remains of the old platform wall can still be seen on the Strathfield side of Copeland Road overbridge. With duplication in 1891, Beecroft station was relocated further north, still on the 1 in 50 grade. Two timber-faced side platforms were provided and a new goods loop siding was constructed on the down side. Following discontent from influential local residents concerning the primitive arrangements at their station, a new station was constructed in 1914. A new island platform





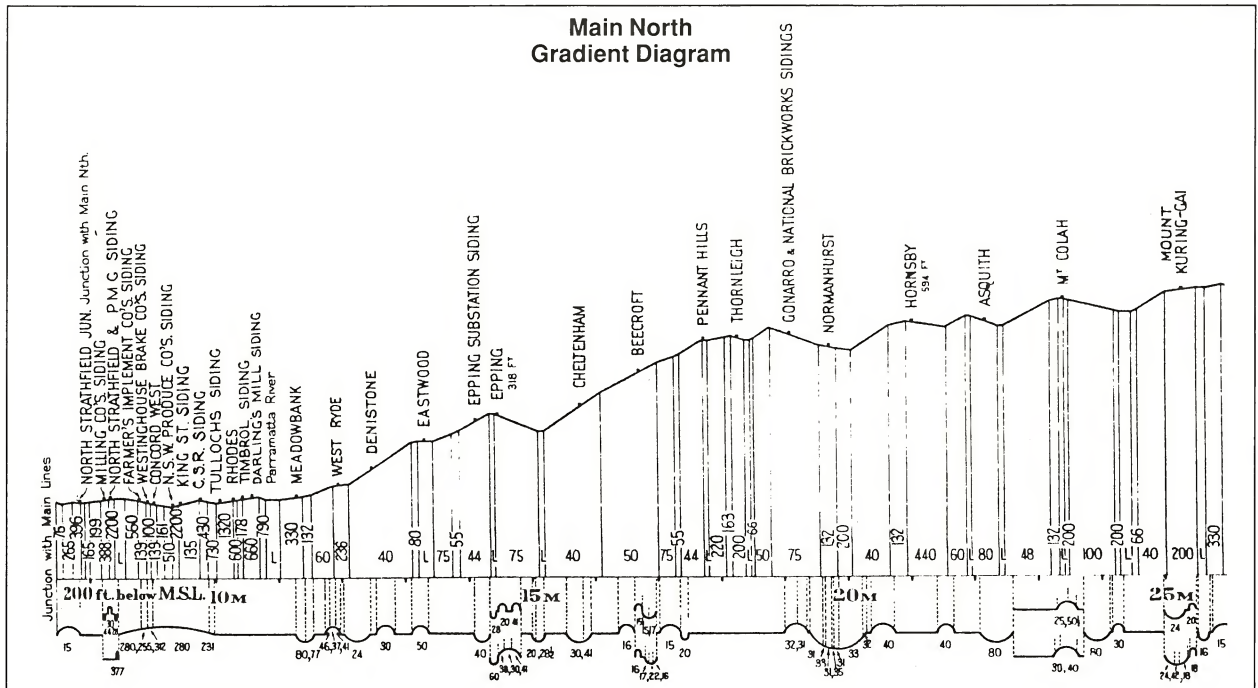
Looking cleaner than usual, Enfield engine 5368, at the head of a down goods, is standing at tonnage signal R.13-87 on the down relief line between Eastwood and Epping on the afternoon of Saturday, 24 January 1959. This was one of two tonnage signals before Beecroft bank, the other being located just to the north of Epping station.

and standard brick buildings replaced the primitive timber buildings of the second station. Over the years, the goods loop siding was modified to a dead-end siding with entry by backing-in from the down main line near the overbridge between Malton Road and Chapman Avenue. In more recent years, the entire siding has been removed. Although the goods siding at Beecroft was quite short, it has been reported that, on rare occasions, the down pick-up goods train to Hornsby was refuged there to allow

the passage of another down train. Driver Mick Farrell (then a fireman) can remember working the pick-up early one morning and being put into the siding at Beecroft for a period just prior to daybreak.

Named Carlingford prior to 1899, Epping station was the site of considerable regrading works which were completed in 1900. This regrading eased to 1 in 75 the former grade of 1 in 44 against up trains on the climb between the Devlins Creek crossing and Carlingford (Epping) station. The sudden

Main North Gradient Diagram



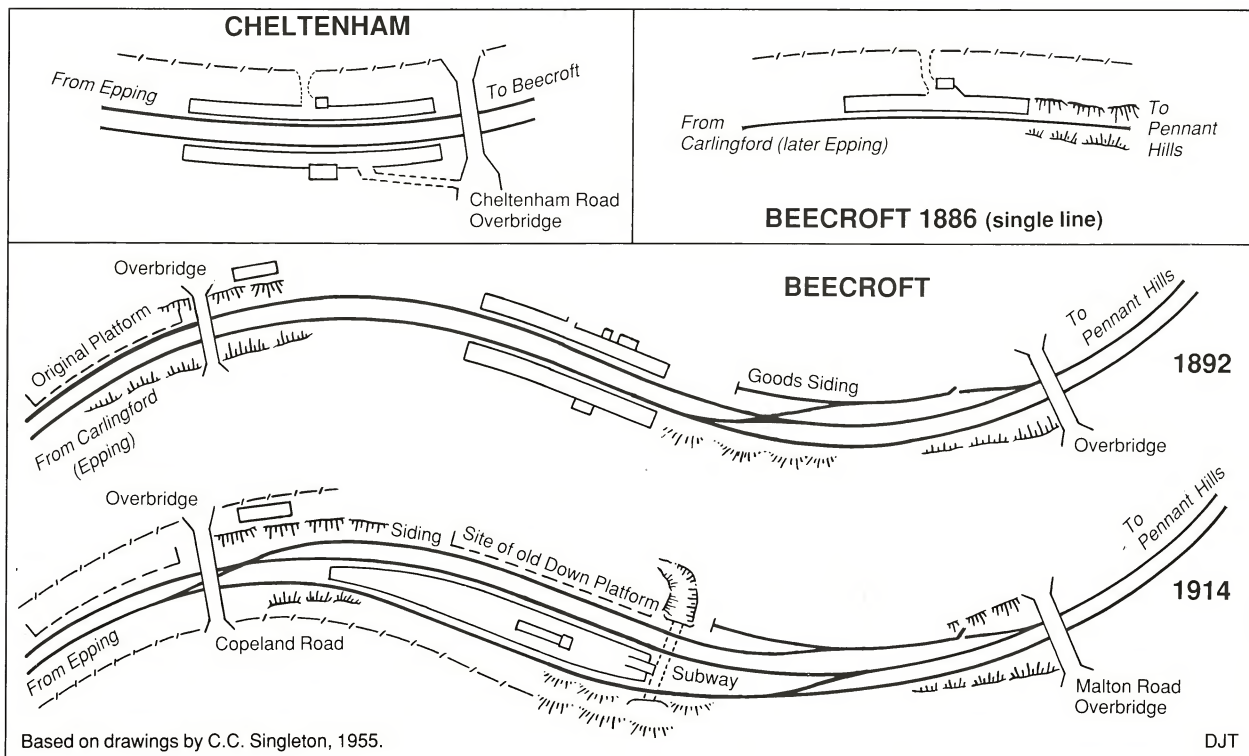


Broadmeadow engine 3513 speeds down the hill from Cheltenham to Epping with an up passenger train from Newcastle on the afternoon of Saturday, 1 August 1959. The train is running over the high embankment that crosses Devlins Creek at the foot of Beecroft bank.

change of grade when running out of Beecroft bank at Devlins Creek had caused a number of break-aways. Also, towards the end of the 19th century, the Eddy regime of the NSW Railways instituted a policy of regrading main lines so that Sydney-bound goods trains would meet a through ruling adverse grade no steeper than 1 in 75. This worthy objective was not always achieved due to overwhelming difficulties with rugged terrain but, in the case of the Epping regrading, the task was quite achievable. The lowering of the tracks at the site of Epping station necessitated two temporary platforms being

erected at a site closer to Sydney. The embankment over Devlins Creek was also raised substantially to give an effective regrading over a distance of 75 chains.

In the steep climb from the relatively flat Cumberland Plain at the Parramatta River crossing between Rhodes and Meadowbank to the Hornsby Plateau, the railway line follows the ridge line that forms the western rim of the Lane Cove River valley. In so doing it passes through many cuttings and embankments over gullies in the deeply incised Hawkesbury Sandstone and the overlying shales of



A rare sight indeed, although a 35 class engine was seen on this working on at least two occasions, in 1958 and 1959. Here 3513 arrives at St. Leonards station on the North Shore line at the head of a miners' picnic special train from Newcastle. Saturday, 15 November 1958.

F.C. Saxon



the Wianamatta Group. For the construction of the original line in the mid 1880s and the duplication around 1891, some of the harder sandstone was actually used for railway track ballast, being quarried at Cheltenham and Thornleigh. At Cheltenham, the quarry site is still visible, located a short distance from the up line several hundred yards on the Epping side of Cheltenham station. It was originally joined to the main line by a siding, known as Ahearn's ballast siding. The Thornleigh quarry site, opened by Amos and Company contractors for the construction of the original single line in 1883-1886, was located some distance from the main line, to which it was connected by a zig-zag railway. Both of these features were described by C.C. Singleton in *Australian Railway Historical Society Bulletin* No.329 in 1965.

As with Eastwood bank in steam days, there were tonnage signals for the steep grades between Eastwood and Hornsby. The first of these were automatic signals N.13-87 and R.13-87 on the down main and down relief lines respectively, just at the foot of the 1 in 44 grade into Epping. These, combined with automatic signal N.14-75, about 1000 feet on the Hornsby side of Epping station on the 1 in 75 descent, were the tonnage signals for down trains on Beecroft bank. The working timetable specified that these signals must not be passed unless in the clear position (or by telephone instructions in the case of failure) by trains conveying loads in excess of the prescribed load. These were the same loads as prescribed for Eastwood bank. A further tonnage signal, automatic signal N.19-93, located 781 feet on the Hornsby side of Normanhurst down platform, was provided for the 1 in 40 grade between Normanhurst and Hornsby.

Prior to March 1959, the great majority of passenger trains I saw and photographed on Beecroft bank were hauled by Eveleigh-based 32, 36 and 38 class engines, while the steam-hauled goods trains were mainly in the charge of Enfield-based 60 class Beyer-Garratts, Standard Goods locomotives or,

more rarely, oil-burning 59 class. Eveleigh-based 36 and 38 class engines were not uncommon on particular goods services. It was also not uncommon to see a Broadmeadow-based 32, 50 or 53 class engine at work on the Short North. Occasionally one saw an engine from a more distant depot which was being transferred or was working its way to or from workshops at Eveleigh or Cardiff.

It was a memorable experience for me to witness the working of the 35 class from northern depots into Sydney early in 1959. This followed the dieselisation of the North Coast line in September 1958, which released many 35 class locomotives from Broadmeadow, Taree and Casino depots. Previously I had seen the 35 class only on visits to Broadmeadow depot and, even then, these were mainly engines based at that depot rather than the rarer, more elusive engines from Taree and Casino. In the mid-to-late 1950s the 35 class rarely ventured as far south as Sydney, being confined essentially to North Coast and New England working. The occasional engine did work to Sydney on a passenger train, but I never managed to be present at the time. When he was a fireman at Hornsby depot, Mick Farrell worked a 35 down the North Shore line on a miners' picnic special with driver Cal Halliday. They ran the engine tender-first from Hornsby to St. Leonards, then worked the train back to Newcastle. I first observed the 35s on occasional goods working between Broadmeadow and Enfield in February 1959 when, to my delight, I saw for the first time some of the "rare" engines formerly based at Taree and Casino depots. I can still clearly remember seeing, as a school boy, former Casino engine 3519 at the head of a goods train from Broadmeadow to Enfield passing a group of us as we walked to Flemington station on a February 1959 afternoon. For many of us it was the first "Nanny" we had ever seen south of Broadmeadow and it created a great deal of attention.

In the weeks that followed, the 35s became more common around Sydney, initially on goods trains to



Left: No.9 down Werris Creek passenger has several additional cars in its load as it is hauled up the hill from Cheltenham station by 3668 on the morning of Saturday, 2 May 1959. The coolness of the morning has accentuated 3668's exhaust smoke and steam.

Right: On a cold mid-winter morning, the sun has not yet reached the Hornsby end of Cheltenham station as 3521 leads No.9 Werris Creek passenger northward at a lively pace. Saturday, 20 June 1959.

Centre Left: A friendly wave from the seated fireman would seem to be evidence that all is well with the fire and that 3613 is having no trouble ascending the grade between Cheltenham and Beecroft at the head of the ten-car No.89 Newcastle passenger which departed Sydney at 8.22am. Saturday, 2 May 1959.



Right: The driver of Beyer-Garratt 6023 is keeping his up goods train well under control as it slowly descends the steep grade between Beecroft and Cheltenham on the morning of Saturday, 1 August 1959. The loading is mainly coal from northern coalfields. 6023's cylinders were bored out in 1958, here indicated unusually by a '+ ... +' marking on the front.



Left: 3826 is working hard but efficiently as it rounds the curve past the lawn tennis courts at Beecroft with No.105 down morning Newcastle Flyer on Saturday, 14 March 1959. This train departed Sydney Central at 9.22am on Saturdays. The quaint little building in the background on right of photo was constructed for Hornsby Shire Electricity Dept. in 1923. 3826 was the first of its class to be withdrawn from service, in March 1961 following the Glenlee collision with 6028.



Enfield, then, in a burst of exposure, they worked a large number of passenger services to and from Sydney during the Easter holidays late in March 1959. Those I observed were mainly the former Taree and Casino engines. From that time and until electrification of the line to Gosford on 23 January 1960, most members of the 35 class became regular visitors to Sydney and were commonly seen on passenger working on the Short North, being based at Broadmeadow depot. During this time they also continued on goods services between Broadmeadow and Enfield. After electrification, they ventured south of Gosford only on enthusiast specials.

It was always an interesting feature of steam train photography to listen to the sound from distant oncoming trains and in this way try to determine the class of engine at the front. This was generally easy with 38 class engines as their distinctive exhaust beat and the shrill sound of the chime whistle was unmistakable. Similarly, the characteristic four cylinder exhaust beat and chime whistle of the 60 class and the unique whistle tone and "clanking" of side rods on the 59 class oil burners could often be distinguished. With other classes it was not so easy, though the 36 class were also noted for their "clanking" and their beautiful whistle tone. From my photographic locations between Cheltenham and Beecroft it was sometimes possible to hear down trains at the top of the ridge near Epping station and then speeding down the grade between Epping and Cheltenham to take a run at Beecroft bank. Down passenger trains usually sped through Cheltenham station with the engine and crew working hard. It was common to see the fireman "hard at it" as the train surged through the station, often with dark smoke billowing from the funnel of the engine. As the grade eased to 1 in 50 between Cheltenham and Beecroft, most trains were moving fairly slowly as they passed the lawn tennis courts beside the Beecroft Village Green rounding the 16 chain curve that led into Beecroft station. The engine laboured on through reverse curves to Pennant Hills, commonly with interesting sound effects. For a crew with a near-full load or a poorly steaming engine, this was a very exacting stretch of track. There were instances of down trains, including some prestigious expresses, stalling on the grade and having to be rescued by the engine detached from a following train, pushing at the rear.

Armed with the best available timetable, I was usually in position between Cheltenham and Beecroft to photograph both down and up passenger trains as most were more or less on time but, occasionally, I was surprised by unexpected up goods trains or light engine movements. The latter, typically Standard Goods engines returning to Enfield from Hornsby or Broadmeadow, or 30 class or 32 class engines returning to Eveleigh from Hornsby, were relatively common. I remember, particularly, having to move swiftly to take a photo of saturated 50 class engine 5147 as it ran light engine down the bank one afternoon. 5147 was working its way from its home depot, Port Waratah, to Eveleigh Work-

shops. It would have been common in the 1940s and 1950s to see a 30 class from Hornsby running bunker-first down the grade to West Ryde, to couple onto and assist to Hornsby an overloaded 36 or 38 class on a mail train. According to Mick Farrell, a 30 class from Hornsby often ran down to West Ryde prior to the arrival of the down North West Mail around 4.00pm and stood pilot at West Ryde until the last mail train for the evening had passed without incident. The engine would then return to Hornsby late in the evening unless it had been required to provide assistance to a down train in trouble. Sometimes the 30 returned to Hornsby "light attached" to the train engine of the last mail train or a northbound goods. This practice was particularly common at holiday times when many trains were heavily loaded. Even Eveleigh-based 19 class 0-6-0 goods engines occasionally were sent to Hornsby depot for minor repairs. I saw a 19 class at Hornsby on occasions between 1957 and 1959 but I never saw one in transit.

The following is a summary of an experienced driver's account of the run between Strathfield and Hornsby, ascending Eastwood bank and Beecroft bank. Of necessity, it is a generalised account as the run varied according to the type of train and the class of engine at the front. Different drivers approached the climb to Hornsby in different ways, but what follows are comments that could apply to a 32 class on a passenger train or a Standard Goods engine on a freight train.

Heading north, the fire should be right on leaving Strathfield after a relatively short run from Sydney (or Enfield) with an engine that was only just warming up. Very light steaming took place over the level run to Rhodes, ensuring that there was ample water in the glass, then slowing down to 30 mph for the bridge across the Parramatta River (when speed restrictions applied). On leaving the bridge, the driver would open the regulator and steam through Meadowbank past the tonnage signal and on to West Ryde. By now a reasonable amount of speed had been built-up with the regulator fairly wide open going around the 24 chain curve to Denistone. The train would have slowed appreciably by Denistone station. The reversing screw was wound towards full-forward going around the 30 chain curve out of Denistone station and the engine would steam hard up the 1 in 40 to Eastwood. In this stretch most trains hauled by 32 or 36 class engines, and certainly engines on goods trains, were working hard and going slowly. It was common for 38s on fast passenger trains to keep up a fair turn of speed to Eastwood, but most trains were travelling slowly when they reached auto signal N.13-09 just before the Rutledge street overbridge. Some goods trains experienced trouble at this point, slipping to a stand near the top of the grade. Normally though, speed was regained slightly through Eastwood station on the short length of level track, then it was straight into a stretch of 1 mile of 1 in 75 to 1 in 44 to Epping past the tonnage signal at N.13-87. By Epping, the water level in the boiler was relatively low, so the



Above: 3823 races No.24 up morning Newcastle Flyer down the hill and around the curve from Beecroft station on its fast journey to Sydney. This train ran non-stop between Newcastle and Sydney, the timetable allowing 2 hours 25 minutes for the journey. So precise was the timing that the working timetable specified times to the nearest half-minute for passing many stations en-route. Saturday, 14 March 1959.



Above Right: Following shortly after the up morning Newcastle Flyer, the up Cessnock Express, No.24a, rounds the curve from Beecroft station next to the Beecroft Village Green with 3822 in charge of two FS and six-car NAB set. Saturday, 14 March 1959.

Right: On the morning of Saturday, 14 March 1959, the down Northern Tablelands Express races into the 1 in 40 grade just prior to Cheltenham station with 3825 in the lead. The train is at the location where Ahearn's ballast siding joined the main line from the left.





On Thursday, 17 December 1959, 3643 rounds the sweeping curve into Beecroft with No.25 Wyong passenger, which departed Sydney at 9.30am on weekdays. 3643 was the first of its class to receive a Belpaire boiler and new cab in 1953.

level had to be regained. The driver would ease off the regulator after Epping and lightly steam past the tonnage signal (N.14-75) beyond Epping station. Drivers of trains with a near-full load never passed this signal unless it was at clear, as the risk of being unable to re-start on Beecroft bank was too great if the train was brought to a stand on the grade.

As a general rule, drivers liked to build up as much speed as possible to take a run at a steep grade. Accordingly, the driver would pick up speed and momentum on the 1 in 75 down grade to Devlins Creek, while the fireman would be getting the fire into final shape in preparation for the assault on Beecroft bank. Rounding the sweeping curve on the embankment over Devlins Creek the regulator would be opened wider as the train entered the grade. From there on, the regulator would be gradually opened further and the screw wound further forward as the engine and train lost speed. After passing through the sandstone cutting beyond Cheltenham station, most trains with a reasonable load had lost speed and were travelling fairly slowly.

Mick Farrell tells the true story of a trip in a 32 class one afternoon in the 1950s when he was firing for driver Don Baker on No.51 Gosford passenger service which departed Sydney at 4.05pm. This generally consisted of eight American cars and was worked by a Hornsby crew. As the train came out of this cutting at Cheltenham they noticed that the 32 had only 130 p.s.i. showing on the steam pressure gauge. The engine was doing it hard and the train was travelling slowly, so slowly in fact that the train was overtaken by a mother wheeling her baby in a pram on the footpath beside the line. The train had previously passed the lady, but, as the train lost speed, the lady and pram caught up and took the lead. There was a reason for this performance up Beecroft bank. The engine (3378 from memory) was well known at the time as a particularly good

steamer. On this run the engine was in for a long trip, returning to Hornsby from Gosford later in the evening, then travelling back to Gosford where it was stabled for the night to return to Hornsby early on the following morning. At Eveleigh during preparation it was decided to "pill" the engine. Giving the engine a "pill" involved putting a lot of coal in the firebox, thus allowing more coal to be taken on at the coal stage at Eveleigh prior to departure. This reduced the need for reaching back into the tender for coal in the latter stages of its long trip. The problem at Cheltenham was caused by the fire not responding early enough to provide sufficient steam pressure for the steep climb to Beecroft. Gradually the engine responded to the fireman's efforts and, although the trip to Beecroft was slow, the engine was blowing off by the time Beecroft station was passed.

Depending on the engine's steaming qualities and the load, the fireman would be either working hard through Beecroft or he would be capitalising on the work he had done previously with the fire. Some firemen preferred to keep the firebox door closed on the steep grades while others preferred different techniques. Most trains were travelling very slowly as they rounded the long 16 chain curve leading into Beecroft on the 1 in 50 grade. Trains have been known to "stick up" in this locality as the grade, the curvature and wheel slippage took their toll. Some drivers regarded the mile or so between Beecroft and Pennant Hills as the hardest section between West Ryde and Hornsby due to the continuous reverse curves on the 1 in 75 to 1 in 44 grades. It was necessary to control slipping over this section, particularly on slow-moving freight trains. At Pennant Hills the level of water in the boiler would again be fairly low, so the correct level had to be regained. The worst was over by the time Pennant Hills station was reached, the level ground and



High-framed 3230, an Eveleigh engine at the time, has no trouble hauling nine cars up Beecroft bank on Friday, 21 August 1959. This train, No.97 Wyong passenger which ran only on Fridays, departed Sydney at 1.42 pm and was photographed between Cheltenham and Beecroft.



On Thursday, 17 December 1959, 3816 is making good time with the down morning Newcastle Flyer (No.21) between Cheltenham and Beecroft. The cutting in sandstone is typical of the trackside scenery in the general area.



3346 is running light engine to Hornsby through the sandstone cutting just to the west of Cheltenham station. The fireman must be relieved that 3346 does not have a near-full load behind the drawhook as it runs easily up the 1 in 40 grade. Saturday, 2 May 1959.

lighter grades to Thornleigh requiring only light steaming, with small sections of steeper track before Gonarro Siding and between Normanhurst and Hornsby.

Mick Farrell remarked that there were not many "incidents" during his time of steam-working as experienced enginemen knew the road and knew what to expect both going up and coming down Beecroft bank. They were well aware of the pitfalls and therefore were well prepared for any difficulties that were encountered. Of course, a poorly steaming engine or a mechanical malfunction could cause difficulties but rarely did he experience any significant problems with Beecroft bank.

Since cessation of steam working on the Short North between Sydney and Gosford, there have been many significant changes made to the line and

to railway practices. However, between Epping and Pennant Hills, the section encompassing Beecroft bank, the changes have not been great. Despite upgrading works, the line and the stations now are not greatly different from how they were in 1960. Over most of the length of Beecroft bank, the trackside scenery, also, has not changed greatly since 1960. The occasional steam-hauled enthusiast special can still provide some semblance of the steam spectacle on Beecroft bank that occurred before electrification. So, too, can listening to the limited number of sound recordings of steam-hauled trains climbing the bank in the 1950s. The first that I heard were the "Hill Talk" recordings made by the ARHS which are recommended listening, if obtainable. ▲



Left: *The photographer was caught napping as 5035 made a quiet and unexpected descent of the grade between Beecroft and Cheltenham on the morning of Saturday, 14 March 1959. 5035 was running light engine between Hornsby and Enfield.*

Right: *No.29 passenger service ran to Gosford on Saturdays only, departing Sydney at 12.06pm. Here, No.29 has 3637 at the front of a "dog box" and eight American suburban cars as it climbs Beecroft bank effortlessly on Saturday, 2 May 1959.*



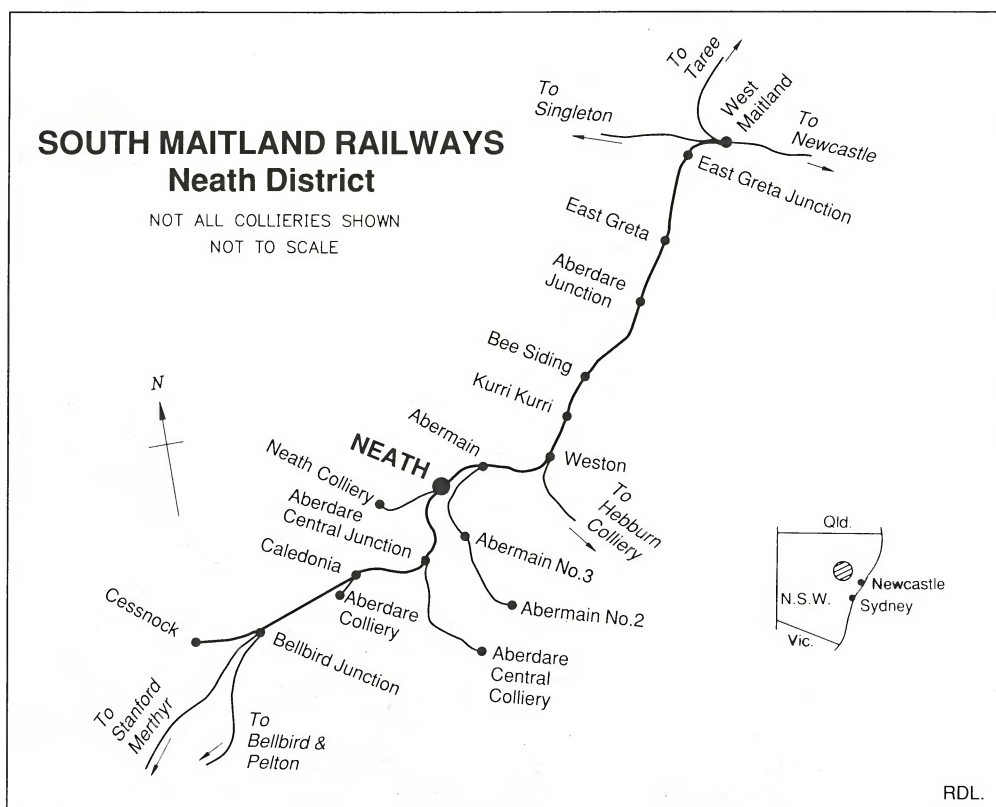
It was pleasing to see a 36 class at the head of No.12 up Glen Innes Mail instead of the more usual 38 class. This was a common occurrence when the loading from Broadmeadow was within the capacity of a 36 or when a 38 was unavailable. Here 3666 glides down the hill between Beecroft and Cheltenham with the seven-car Mail on Thursday, 17 December 1959.





Above: Two lengthy side platforms were provided at Neath, each capable of accommodating quite respectable trains. In an era long after their need had passed, 2-8-2 tank No.22, leads a line of empty non-air coal hoppers through the station as the train makes its way from East Greta Junction to the mines. The signal box is situated at the far end of the left hand platform.

R.D. Love



Above Right:

Early morning sunlight highlights the features of the front of Neath Signal Box set at the East Greta Junction end of the up platform. A small round-top window on the left served as an access for travellers to purchase tickets, while behind the four sliding panels lay the main signal-frame area. The heap of coal at the foot of the steps provided the heating so necessary on the chilly winter nights.

P.C. Booth

Not for resale

On the South Maitland Railway in 1930

Ron Preston



The year 1930 was not one to be remembered with fondness for any business interest, let alone for a privately-owned railway which was dependent on other industries and the travelling public for its income. Not only was the financial situation grim in Australia, its uncertainty throughout the world was further eroding the financial fortunes of those who looked to exports to bolster their profits.

In this regard, the New South Wales mining community and, in consequence the railways which hauled their production, were feeling the pinch. As coal formed by far the major revenue source for the South Maitland Railways, the monetary plight of the system was a daily cause for concern for its management.

The Great Depression, the cause of all the financial ills, had affected the New South Wales Government Railways to the extent that, in April, all staff

agreed to work for 44 hours per week, instead of the 48 for which they had hitherto been paid.

The miners had not helped the situation by demanding a 12% wage increase, a lengthy strike resulting. With orders consequently going elsewhere, miners were dismissed and queues seeking relief and the dole increased. For the South Maitland Railways this was a financial disaster, as income was severely reduced.

Australia's hopes sailed with the Australian cricket team, which was fighting England in the traditional battle for the Ashes. Even these aspirations were dashed when the Home Country won the first test, despite a valiant fight by Don Bradman and Stan McCabe. The British, too, were not without additional problems and a Jack the Ripper type was regularly terrorising the city of London.

Most people who maintain an interest in railways



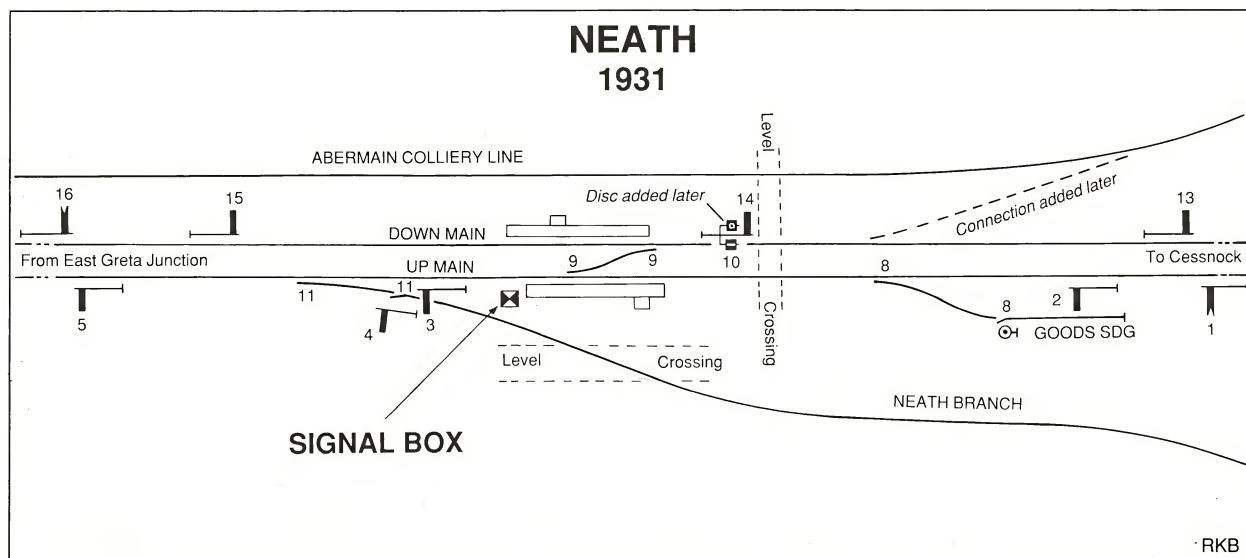
Improved safe-working procedures were initiated on the SMR with the introduction of Government operated passenger services. 3039 heads an American suburban set, standard accommodation for these trains, waits at Cessnock before heading back, through Neath, to Newcastle.

J. Hampson

will have treasured memories of the South Maitland Railways, the private line which used steam to haul its coal trains throughout its nine decades of operation. Formed as the East Greta Company in 1892, the standard gauge line which served the collieries and towns to the south of Maitland had operated a service for passengers from June 1902. For some twenty-seven years, a heterogeneous collection of

passenger cars, both four and six wheel, had trundled along the developing line as it reached out to Stanford Merthyr, near Kurri Kurri, and then on the subsequent main line to Cessnock.

Locomotives to haul these trains were also from various sources, former NSWGR 4-4-2 tank engines (an ex-M class which became No.21, and two CC class, Nos 11 and 12) being the most significant.





Immediately on the East Greta Junction side of Neath, a branch line, originally serving Neath Colliery, made its junction. An empty train heads over the Cessnock Road level crossing and heads up the hill to the pit, the elegant two-storey Neath Hotel visible twixt the box and the smoke.

P.C. Booth

These sufficed until traffic outgrew their collective capacities and they struggled on until the arrival from Beyer, Peacock of Nos 15 and 16 in 1912. These two were near-duplicates of the Government S class 4-6-4 tanks and their introduction brought a new sense of business to the Cessnock passenger service. A third 4-6-4T was added in 1923 from the same source, assuming the number 29.

In the meantime, the coal traffic grew at a steady rate. Early 0-6-0 engines, both saddle-tank and tender, had been steadily supplemented with more substantial power. From 1903, No.6, a chunky 0-8-0 saddle-tank, had been hauling coal and it was joined by a substantially similar loco, No.9, in 1906. Both were products of the Avonside Company.

Still larger engines came with the 0-8-2 side tanks, again from Avonside. Nos 13 and 14 arrived in 1908 and 1909 respectively, while sister No.1 (the second loco to carry that number) reached the property in 1911.

The ultimate power for the East Greta Co. and its successor South Maitland Railways first graced the rails in November 1912. Allocated the No.10, the 2-8-2 side tank not only formed the basis for a total fleet of fourteen, it also set the pattern for the haulage of coal on the South Maitland field until the

end of the steam era in 1983. Built by Beyer, Peacock and Company, the powerful tank was to all intents a tank version of the NSWGR T class 2-8-0 tender engines, which were proving a great success on the Government system. The big tanks were allocated the following numbers: 10, 17 to 20, 22 to 28, 30 and 31.

In 1918, an amalgamation of the interests of the East Greta Company and the Hebburn Coal Mining Company resulted in the formation of the South Maitland Railways Proprietary Limited. So far as operations were concerned, the customers probably saw little difference and the coal, the passengers and the occasional goods train went about their respective businesses.

The early years after World War I were kind to the new company and traffic grew, resulting in the ordering of the 10 class tanks to reach the family of fourteen mentioned above, the last of the tribe entering service in 1926. These additions marked not only the zenith for the SMR loco fleet, but also the peak traffic role for the Company. During the next few years the economy started its decline, resulting in the Great Depression.

In 1929, the effects were being felt and passenger traffic on the private railway was in sharp decline.



To exacerbate the effect, the ancient rolling stock used was not only grossly unattractive, but it was well past its prime and major repair or, more importantly, replacement was essential. Unfortunately, like most of the world, the South Maitland Railways had no finance to invest in such a costly project. It should be mentioned that some additions to the fleet had been made over the years and some fifteen "American", end-platform, bogie cars were in traffic.

The mining industry has never been noted for its trouble-free industrial climate and, with finances at a low ebb, local mine managements reduced the wages of their staff by 12½%. Strikes and other actions followed and, from March 1929, coal traffic became almost non-existent. Unfortunately, the Company was bound by charter to haul any orders and, when pressed to take a load of strike-breaking coal, the crews refused. An attempt to move the train using management staff brought the expected strike action to the private railway. Perhaps it came as some relief, for the operation of the passenger service was only adding to the financial woes.

On the evening of 1 March 1930, a fire broke out in the area of the large carriage shed, where, remarkably, the passenger fleet was stabled. All stock, together with the shed, was destroyed.

In the aftermath, local bus companies profited by an increase in traffic but, just as on other occasions, the public asked for a rail service.

Industrial peace returned, and such mines as had orders returned to work and the freight locomotives again made steam. Not so the passenger power, and the older engines such as the four-coupled tanks were stored. As the coal traffic offering did not require full capacity, many of the older six- and eight-coupled goods locos joined them.

In the interim, negotiations were taking place on the future of the passenger traffic and an agreement was reached for Government carriages to be used. Similarly to expedite the through movement of the trains, it was agreed that the NSWGR engine which had brought the train from Newcastle, would head onto the private line and steam through to Cessnock. Saturday, 31 May 1930 was the first day of the new service.

One of the conditions imposed by the Government before allowing its rollingstock to run on the SMR was that proper safe-working practices were to be in place. Tyler's block instruments were to be used and all relevant train information was to be recorded in a Train Register Book, just like the ones used in Government signal boxes.

From a Train Register Book for Neath, which has

Left: The main elements in Neath's safeworking system were a pair of Tyr's one-wire, three position block instruments. On the left is the instrument which controlled both the up and down lines to Caledonia on the west or Cessnock side. It was fitted with a large brass bell while its partner, seen on the right hand side, was fitted with a coiled gong to announce train movements to and from Abermain. These two distinctive sounding gongs gave a clear, audible indication of the bell signal's origin. Between the instruments is a small round instrument to indicate the position of Neath's up distant signal, set a long way west of the box. By the time this photo was taken, Abermain had closed and the next signal box in the up direction was at Weston.

P.C. Booth

Right: A latter day view of the McKenzie and Holland interlocking machine in Neath signal box with the instrument shelf behind the levers. On the right of the photo can be seen an electric staff instrument which had just been installed as a prelude to closing one line and operating the main line as a single track.

P.C. Booth



survived for over sixty years, an idea of the workings of the time can be gleaned.

It would appear that the new arrangements were put into practice on Wednesday, 28 May 1930. At this time, traffic had fallen to such a low ebb that a day shift only was worked on the SMR. At 7am that day, Signaller T. Fielding signed on and prepared to operate the box under the new rules.

Neath was a fully signalled station on the double-track section. In addition, a junction to the north of the platform allowed access to Neath Colliery which was served by its own short branch line, while junctions in the down main provided for trains running direct to the Abermain Nos 1 and 2 Collieries situated north and south of Neath Station, re-

spectively. In practice, trains operating between these two pits left the SMR tracks at Abermain and travelled on their own parallel right-of-way, some 100 metres east of Neath.

The first train to be offered to Neath on the morning of the 28th was a load of empty non-air coal hoppers heading for Stanford Merthyr Colliery, some 12 miles (20km) away. Train numbers for all coal and goods trains on SMR were taken from the number of the engine, and the 1-2-1 bell code offering No.25 was received from Abermain at 7.54am. The big 2-8-2 tank steamed past at 8.04, its line of hoppers clanking and rumbling along behind. There was little time wasted by the crew who returned at 11.08am as the first up train of the day, a string of



Still active at the time of this story were the three Avonside 0-8-2 tanks. No.14 was eventually sold by the South Maitland Railways and finished its days shunting at the Maitland Road Sidings between Hexham and Tarro.
D. O'Brien

loaded hoppers now tugging at the drawgear.

In the meantime, a 3-2 bell code announced the progress of sister engine No.27, which was having an easier time as a lone brake van made up its load. Evidently, problems at its unspecified destination resulted in no return loading and, at 12.15pm the unprofitable train returned and disappeared towards East Greta.

However, there was still some freight business to be hauled and, at 12.25pm, No.24 passed with the daily goods. A 2-2 code was sent to Caledonia, the station in advance, to gain authority to despatch the train.

No.25 was having a busy time and, in answer to a call from Stanford Merthyr, led a line of empties towards that pit at 1.11pm. As evening shadows lengthened, the big tank reappeared with the loads. The time was 4.53pm and, six minutes later, the safeworking necessities were completed when Abermain signalled the safe passing of the train. So ended the first day of the new working and our signalman signed off and headed for home, doubtless musing on happier days when round-the-clock working would have seen him hand over to a colleague. Mr. Fielding returned next morning at 7am and received his first call to action at 7.50am, when

Abermain sought permission to send No.30 and empties on its way to Stanford Merthyr. In these austere days, every economy was to be utilised and, behind the SM hoppers was a number for Maitland Main, a short distance away. Once these were delivered, No.30 returned to the former pit, collected a load, and was recorded as passing Neath at 11.42pm.

The next train to be offered on the down was the goods, headed on its way to Cessnock by No.18. Its passing was recorded at 10.33am.

Three-quarters of an hour later, the 1-2-1 bell code sought permission to send No.23 and its train to Millfield Colliery. A passing time of 11.57 was entered in the all-important book.

Neath was situated at the foot of a long 1 in 60/50 grade, which took the line over a range of hills to Caledonia. Towards the top of the grade, Aberdare Central Junction, complete with small signal box, provided access to a colliery of that name. Since the box was only manned as required, it was necessary to "cut in" the facility whenever necessary. Both Neath and Caledonia were required to communicate, by bell signals, to give permission for this to take place.

On the day in question, No.18 had arrived at

The station to the west of Neath was Caledonia. Here, the daily goods, if lightly loaded, would pause and build up its load from the extensive colliery sidings there. On this day in 1966, No.31 has but two S trucks and a CHG van and has consequently retreated to the sidings in search of additional loading.

R. Preston



Caledonia just as staff arrived at "Central" to test the equipment.

For 45 minutes the 2-8-2 cooled its wheels while the 3-3-3 code was sent out to "open" the box and, when all was checked, the 3-4-3 code was sent to "cut out" or close it.

Things got moving again at 1.48pm and No.18 rumbled past Neath at 2.07pm.

The *Maitland Mercury* of the time reported that "each coal order was awaited with interest" and Maitland Main must have been overjoyed to receive a requisition. At 2.21, No.31 lumbered on its way to fulfil the demand, returning at 6.48pm. At 6.57pm, the last codes of the day were exchanged and the signalman departed.

The following day, the goods passed at 11.03am, No.19 in charge, while Nos 30 and 23 worked assignments to Millfield and Maitland Main respectively. The afternoon was enlivened when, at 3.30pm the block instruments failed, and telephone working was introduced to allow No.23 to pass at 4.07. The goods did not return until 4.21 and Fielding had an early day, finishing at 4.30pm.

Saturday, 31 May was the start of an era on SMR for, at 6.02am, Mr. Fielding received a 4 beat bell code seeking permission to send train 697, the first Government-operated passenger train along the line, Cessnock-bound. Unfortunately, the loco number was never recorded, each passenger train maintaining its NSWGR number on the private system. In deference to the steep Caledonia Bank, the 30 class 4-6-4 tank, standard power for the all-stations service, departed Newcastle funnel first, the opposite to trains which terminated at Maitland. As coal trains on the SMR had a 1 in 70 ruling grade facing up, loaded trains, the engines worked funnel-first towards East Greta. Hence, the passenger trains had a unique quality in the way the loco faced.

During the day, two coal trains ran to Maitland Main, Nos 30 and 25 doing the honours, while one worked to Millfield with No.28. The goods was in the

capable hands of No.23. During the day, seven passenger trains operated in each direction, the last up service working past at 11.24pm. The day was not without drama for signalman H.Farnham, who had signed on at 3pm for, after the departure of 776 pass, the block instruments again failed and the last two movements in each direction were processed utilising the telephone.

Such was the case for the first train to run on Sunday. However, help was at hand and the three other passenger trains to run were safeguarded by the block instruments.

On most weekdays, six passenger runs were scheduled, the first passing Neath at 6.19am on the down, the last returning at 9.23pm. The exception



An up coal train approaches Neath station in 1966. Visible through the grass to the left of 2-8-2 tank No.31 is the line which linked the Abermain No.1 Colliery to its distant pits. The crossover which allowed access to this system from Neath yard can be found adjacent to the tank's front buffer beam.

R. Preston



to this rule was Friday, when an additional passenger, No.781, passed at 10.41pm, returning as 790 at 11.29pm.

In the meantime, some hope for the coal community started to appear. Winter brought heating needs and, in these times, that meant coal for people to burn in stoves and in fireplaces. June saw an average of 25 loaded trains running each weekday, the goods being in addition. This trend continued for the first two weeks, but then trouble appeared in the form of steady rain. The low lying ground around

Maitland has always been susceptible to flooding, the depot at East Greta being specially located on a hill to keep it above flood level. Unfortunately, the tracks could not always maintain such an elevation and East Greta Exchange Sidings were on the flood plain. On Tuesday, 17 June, doubts as to the future of rail operations started to appear and the last down train to be offered was hauled by No.20 which headed off up the hill with empties for Bellbird at 8.23am. Signaller A.W.Smith signed on at 11pm, and after one passenger and three loaded trains had





These three photographs show standard coal train rolling stock on the South Maitland Railways for over seven decades. There were the black Beyer, Peacock 2-8-2 tanks, such as No.22; red non-air coal hoppers of which this pair is typical; and, to bringing up the rear, the Company's version of a CHG van, a grey livery distinguishing it from its Government cousins.

R.D. Love

been despatched to East Greta, settled down to wait. One more load, No.20 returning from Bellbird, passed at 12.22am on the morning of the 18th and then, nothing. At 10am that morning, Smith closed his box and headed for home through the sodden countryside. Nothing was to move again for almost two weeks, and then only after the waters had receded and the tracks had been made safe.

Mr H.Farnham was the first to return and, at 2.20pm on 30 June, received No.20 making a cautious test trip with a four-wheel SMR van as its load. Seventeen minutes later, No.22 passed en route to Maitland Main followed after a further 19 minutes later by Nos 23 and 31 and two vans, heading for Aberdare Colliery and Bellbird respectively, to rescue loaded trains that had been patiently waiting. By 11.24 that night, six up loaded trains had been processed, Nos 20 and 23 each making two trips. No passenger trains were operated.

However, confidence returned and on 1 July, so did the Government consists. Coal traffic set out to make up for lost time, up to 34 trains being handled on the up on the 3rd. Sunday 6th saw three loaded consists pass, on a day of traditional rest for the coal fleet.

On this exceptional day, ten of the 10 class were in action to Neath, while all three 0-8-2 tanks were

noted. Even two of the 0-8-0 saddletanks, Nos 6 and 9 had an outing. Such was the congestion that, at 10.55am, No.6 with empties for Aberdare had to wait for line clear for so long that No.18 with van had arrived. To save track occupancy, the smaller train was added ahead of the first and, at 11.24am the whole ensemble was despatched up the hill.

All was not well over the hill and the next two trains, No.28 with 42 empties for Pelton and No.30 with 55 Aberdare hoppers, were amalgamated into one train by bringing the second train onto the van of the first. Together they were sent on at 11.51am. Similarly, 25 and 19 with their Aberdare- and Maitland Main-bound trains came together, leaving at 1.25pm.

For the remainder of July, an average of 20 loads plus the goods passed each day.

An unusual up movement was entered on 18 July. Traffic headed for the Junction was brisk at this time, so, to minimise the movements, No.28 and van returning from Aberdare were joined ahead of No.20 with loads from Maitland Main. The bell code 2-1-2 was sent at 4.36pm to announce their departure.

August was not as profitable for the Company, an average of 15 loaded coal trains being seen each day, Sundays excepted.

215

X
592
81 1226

BLOCK TELEGRAPH "TRAIN REGISTER BOOK," FOR DOUBLE LINES.

Station Neath Date 7.10.1930 DOWN TRAINS.

TRAIN.		TIMES OF SIGNALS FROM AND TO STATION IN REAR.						TIMES OF SIGNALS TO AND FROM STATION IN ADVANCE.						REMARKS.
Description as Signalled.	No. when this can be given.	Is Line Clear received	REPLY SENT.		Train Departure received	Obstruction or Blocking Back sent.	(a) Train Arrival or Obstruction Removed sent.	Is Line Clear sent.	REPLY RECEIVED.		Train Departure sent.	Obstruction or Blocking Back received	Train Arrival or Obstruction Received	
			Is Line Clear acknowledged.	Section Clear but Station or Junction Blocked					Is Line Clear acknowledged.	Section Clear but Station or Junction Blocked.				
12-1	28	557	557		6.3		6.7	6.3	6.3		6.7	6.28	FL	
12-1	31	651	651		7.0		7.3	7.0	7.0		7.3	7.24	FL	
12-1	17	73	73		7.8		7.13	7.25	7.25		7.25	7.45	FL	
12-1	24	713		7.13	7.15		7.19	7.25	7.25		7.25	7.45	FL	2-1-2
4	77	735	7.35		7.54		7.56	7.54	7.54		7.56	8.6	Pass	
English on Duty 11.45 am 7.30														
12-1	18	97	97		9.15		9.20	9.15	9.15		9.20	9.38	Neath	
12-1	31	945	9.14		9.50		9.55	9.50	9.50		9.55	10.13	Neath	
12-1		956	9.55				Cancelled	10.12 pm						
Wednesday 8th Oct 1930														
4	697	545	545		6-		6.5	545	545		6.7	6.19	Pass	
Yarnham on 7.0 am 8.10.30														
12-1	18	628	6.28		6.34		6.37	6.34	6.34		6.37	6.53	FL	
2-2	10	658	6.58		7.0		7.5	7.5	7.5		7.14	7.26	FL	
12-1	28	70		7.0	7.17		7.21	7.26	7.26		7.26	7.48	FL	
12-1	26	720	7.20		7.34		7.43	7.48	7.48		7.48	8.5	FL	
4	723	8.9	8.9		8.44		8.48	8.9	8.9		8.17	8.25	Pass	
12-1	24	838	8.38		8.44		8.47	8.44	8.44		8.47	9.2	FL	
12-1	27	923	9.23		9.31		9.37	9.31	9.31		9.37	9.49	FL	
12-1	25	952	9.52		9.57		10.1	9.57	9.57		10.1	10.16	FL	
4	733	10.2	10.2		10.37		10.31	10.21	10.21		10.31	10.30	Pass	
243							Adare General	General	General				11.8 pm	
12-1	31	1145	11.15		11.23		11.28	11.23	11.23		11.28	12.5	FL	
12-1	26	1129	11.29		11.34		11.40	12.5	12.5		12.5	12.19	FL	
12-1	28	12.8	12.8		12.15		12.20	12.19	12.19		12.19	12.38	FL	
3-2-3							Adare General	General	General				12.17 pm	
12-1	24	12.20	12.20		12.21		12.24	12.38	12.38		12.38	12.50	FL	
12-1	25	1.45	1.45		1.53		1.51	1.53	1.53		1.51	2.14	FL	
3-3-3							Adare General	General	General				2.15 pm	
34-3							"	"	"				2.15 pm	
12-1		2.25												
12-1	749	238	2.38		2.41		2.43	2.38	2.38		2.41	2.55	Pass	
12-1	17	247	2.47		2.47		2.54	2.55	2.55		2.55	3.14	FL	

(a) When a train arrives at a station, and the "Train Arrival" signal cannot be given at once in accordance with the Regulations, the actual time

Train arrived must be placed over the time the "Train Arrival" signal is sent, thus:—9.30.

Bell signals not provided for in the columns must be recorded in the Remarks column.

Not for resale



When traffic was heavy, SMR solved track occupancy problems by simply amalgamating two trains. The manoeuvre was used at several locations. On 8 August 1980 No.31 plus GHG van was coupled to No.30 and No.17 and a rake of BCH-type hoppers, on a down Pelton coal, seen here passing Weston. It was only in the later days of the SMR that it was possible to see three locomotives involved in this work. R.K. Booth

The 26th was an exceptionally good day, with 26 coal movements being recorded on the up. During the day, Nos 22 and 19 and their respective empty hoppers were joined end to end for a 3.25pm departure for Caledonia.

A problem with one locomotive saw No.22 heading an up Pelton exchange trains with No.25 on a down Bellbird in the early hours of the next morning, Signaller Farnham masterminding the movements required.

While the coal business fluctuated between 11 and 22 loads plus the goods each day, business was not as bright in the passenger market. From Sunday, 16 November, train services were suspended on Sundays and no traffic moved on those days. As the passengers ran on Saturdays, some seven coal movements were usually handled to maximise the utilisation of staff on duty. Surprisingly the Cessnock services had survived longer than the country trains on the NSWGR, cuts to which had taken place in July. The woes of the community were compounded when 650 men were surplus to the Government Railways' requirements. Some 450 were reported as unemployed at Cessnock at this time. This situation was not helped when a stone fault was found in Millfield Colliery and 50 staff were dismissed. Consequently, the SMR lost some long distance traffic.

In these troubled times, some traditions were maintained. At 7.24am on Tuesday, 16 December,

a down special empty car movement was entered as train D7. The balancing movement, E4 returned on the up at 9.20am. This, the annual miners' picnic train was probably worked by a 32 class 4-6-0 as it would be heavily loaded. At 4.39pm that afternoon, special E10, with bell code 3-1, headed for Cessnock, the return empty cars passing at 5.19 as E16. In view of the times and allowing for the economics of the time, the picnic was probably held at Maitland to minimise costs.

December was a bad month and, from the 13th coal business declined. The miners' holidays further reduced the traffic, an average of eight loads passing Neath each day in the two weeks leading to Christmas Day.

In the days between 24th and the year's end, only passenger runs were recorded while No.25 ran the goods on the week days. One exception was noted when, at 2.30pm on the 30th, No.28 passed on the down with empties for Aberdare. It returned with the van only at 3.44.

There were other interesting trains during the seven months considered. Cessnock was blessed with a racecourse and, when the races were on, special trains were run to bring in the punters. On Saturday, 16 August, the 3-1 bell code announced the approach of the special. At 1.11pm it thundered past, 2-8-2 No.25 pounding away in the lead. Having delivered its hopeful passengers, the tank returned light engine. In its place came No.26, running light



Left: A typical scene on the SMR where No.30 with a loaded Bellbird coal train passes No.10 with an empty Aberdare coal near Aberdare Junction signal box, in September 1973.

R.D. Love

Right: Shortly after passing through Abermain, up coal trains passed over Swamp Creek bridge. The steel structure feels the passing of No.18 and train of non-air hoppers which have been loaded at Neath Colliery.

P.C. Booth

to Cessnock to bring back E96 special, passing Neath at 5.40pm.

Greater economy was used on 13 September, when No.30 powered both trips. Similarly No.25 was used on 11 October and No.31 on 29 November.

However, the most spectacular train to run during the time under review probably did more for the flagging morale of the community than it did for the Company's profits. In these days, Wirth's Circus made its pilgrimage around the state by rail and, when it made its way to Cessnock on 19 September, it was the SMR's turn to bring in the attraction. A 1-3 bell code announced the approach of the train and, out of the morning mist came Nos 30 and 26, double-heading the long, heavy train. The assault on Caledonia Bank started at 4.53am and ended 15 minutes later. Once the train was stored in Cessnock yard, the two locos returned to Caledonia and collected loaded trains from Aberdare Colliery. No.30 passed Neath at 10.06 and No.26 at 11.17am.

A circus does not stay long and No.24 headed for Cessnock at 10.04pm that night. Its task was to marshall the train for the return at the conclusion of the evening's performance. Just after midnight, sister No.30 followed and together they lifted the big special up the 1 in 70 grade from the terminus to Caledonia. Train E24 rolled through Neath at 12.50am.

One form of traffic that added to the SMR coffers was the hauling of explosives for blasting in the mines. Usually a Government four-wheel powder van was used for this delicate commodity. Other Government vehicles were frequently included with the non-airs, and many S trucks were sent to collieries to be loaded with large lumps of steaming

coal, locomotive fires being their ultimate destination. Abermain Colliery appeared to have a monopoly on this market but, on 16 September, No.25 paused at Neath to lift 16 S trucks from the pit.

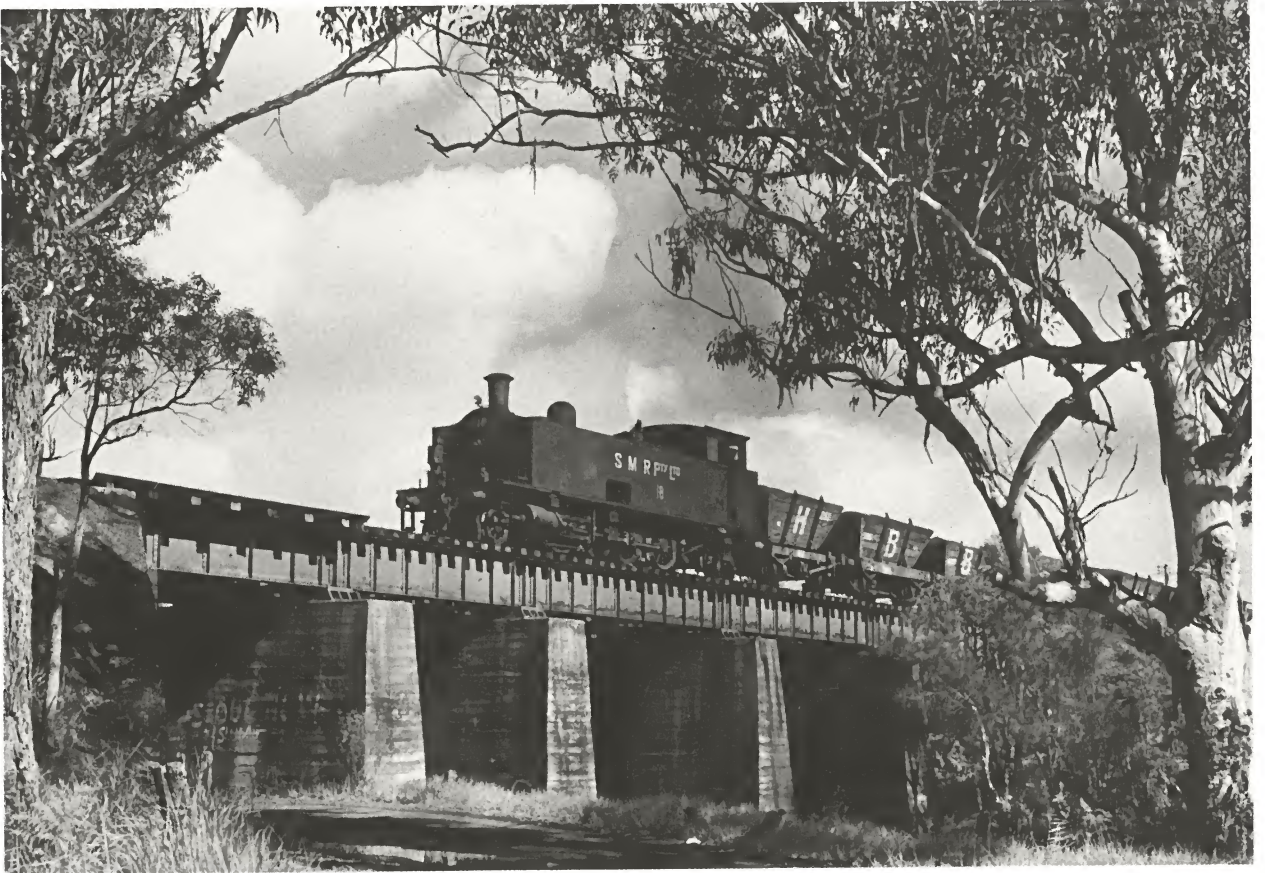
More variety was added to train movements when the up goods was lightly loaded. On reaching Caledonia, the top of the grade, it would frequently add loads of coal from the adjacent mine and thus make a more profitable run home. In fact, Aberdare Colliery had the lion's share of the market for most of the time. On 5 September, this pit sent out ten of the 19 trains to run during the day.

Not so fortunate was Hillend Colliery, a small concern situated on the western approach to Caledonia and served by a trailing crossover to up trains. Only two loads are recorded as coming from that source, one headed by No.20 on 7 July and the other worked out by No.22 on 27 November. This latter train was the first after a fire in the mine on 12 August.

As history shows, the South Maitland Railways survived the Depression, the fourteen 10 class maintaining the tradition until 1983. For the four men who maintained Neath Signal Box in 1930, this outlook was not obvious but, thanks to their dedication, the future was achieved and this record preserved. ▲

Right: The Neath signalman, acting as road traffic flagman, collects the single line token from the fireman on No.26 as it rolls off the Neath Colliery branch to rejoin the main line in October 1978.

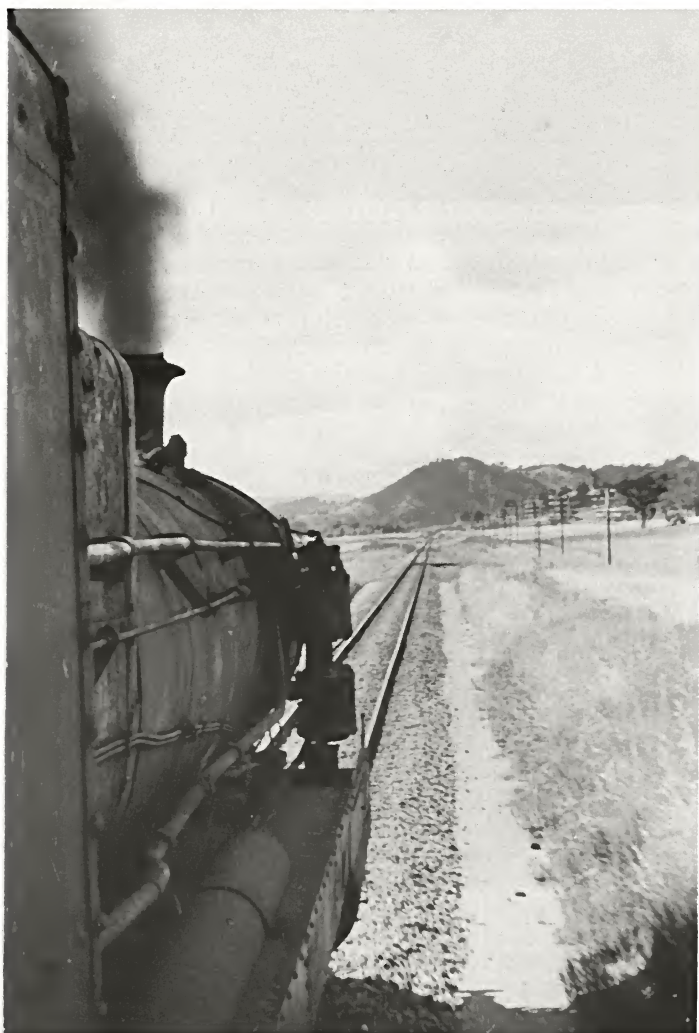
R.D. Love





Above: In later years, No.22 Northern Tablelands Express was tabled to cross the down North Mail at Dumaresq, a few miles north of Armidale. It was usual for the Mail to arrive first, finish the station duties, then reverse back into the section from which it had come, then run forward into the loop. On 20 April 1981, right on time, the four-car 900 class set from Glen Innes passes through on the main line, crossing 4506 standing at the head of the waiting Mail.

R.D. Love



Left: Locomotive 3510, at the head of No.9 Werris Creek day train in January 1962, picks up speed on a straight section of the main North line near Scone. Ahead lies the Liverpool Range and the start of a thirty-mile climb to the summit near Ardglen Tunnel.

R.D. Love

Above Right: In times of crew shortages or heavy traffic, the Werris Creek enginemen assisted the Murrurundi-based crews on bank work. In 1964, 5367 shoves hard on the van of a down goods near Pangela.

Tony Eyre



LIFE OF AN ENGINEMAN

Bruce Griffey

Part 4 - The Final Years.

Of the forty-three years which I spent in 'loco, twenty-four (or more than half my Railway career) were spent on the 900 class railcar sets which were operating on the Northern Tablelands Express services. Of course, other passenger and tabled goods trains occupied some of this time, but the 900 class DEB sets were in constant use for 24 years and Werris Creek 'diagram' drivers were used as normal crew for the duration of their use.

At this point, perhaps it would be useful to explain the meaning of the often-used term 'diagram' or 'rostered' work and how it applied in a large locomotive depot such as Werris Creek.

Diagram or Roster.

In most large depots, like Werris Creek, Broadmeadow, Goulburn, etc., certain regular passenger and goods trains were worked by that particular depot, irrespective of whether or not seasonal goods

loading was available. Wheat, stock, coal trains and general freight trains, as well as some 'holiday extra' passenger trains, ran only as required and therefore were not 'rostered' trains. The most senior and experienced drivers in the respective depots were elevated to the roster or diagram working, whereby their duties were drawn up into a regular program and they were always able to see, in advance, their jobs for the regular trains worked by their depots.

Contrast this with the remaining men, termed 'rouseabout' crews, on non-rostered work, who were notified of their next job only on the day of duty or, at best, the previous day, whether or not they were required for work or 'booked off'. There may be, say, twenty drivers in a particular depot on the diagram. Each would have his jobs for the fortnight set out on the roster, thus enabling him to plan his free time more accurately. Such a diagram may read:

Monday	off
Tuesday	sign on 11.30am, work No.22 Northern Tablelands Express to Sydney, thence to barracks;
Wednesday	sign on 7.10am, in Sydney, work No.23 to Werris Creek, sign off;
Thursday	sign on 1.30pm, work No.23 Express from Werris Creek to Glen Innes, to barracks;
Friday	sign on 5.10am Glen Innes, work No.22 back to Werris Creek, sign off;
Saturday	10.00am 'town' shunter (pilot or standby driver for the 'Tablelands Express drivers);
Sunday	booked off.

As a vacancy occurred on diagram working, due to a retirement, etc., so the next most senior driver was elevated to the position, retaining the set number of men as determined by the volume of regular work carried out by that depot. Similarly, with the

firemen, the most senior men in the depot were offered a position on the diagram and, in each case, it was usual for a particular fireman to work with a regular driver for many years before retirements, or the fireman himself gaining his driver's appointment, would cause a change to this arrangement.

Rostered or diagram work had both advantages and disadvantages and not all men took the opportunity to go onto the rostered work. Most diagram work involved going away to barracks, usually on fast scheduled trains (mails, expresses or express goods trains, and therefore no loafing along), often no meal time (crib) and little, if any, overtime. On the other hand, rouseabout work meant that free time at home could not be planned, as the call boy was always 'around the corner' waiting to bring you to work. However, with the rouseabout work, there was always the opportunity for extra work, especially in the wheat and stock seasons.

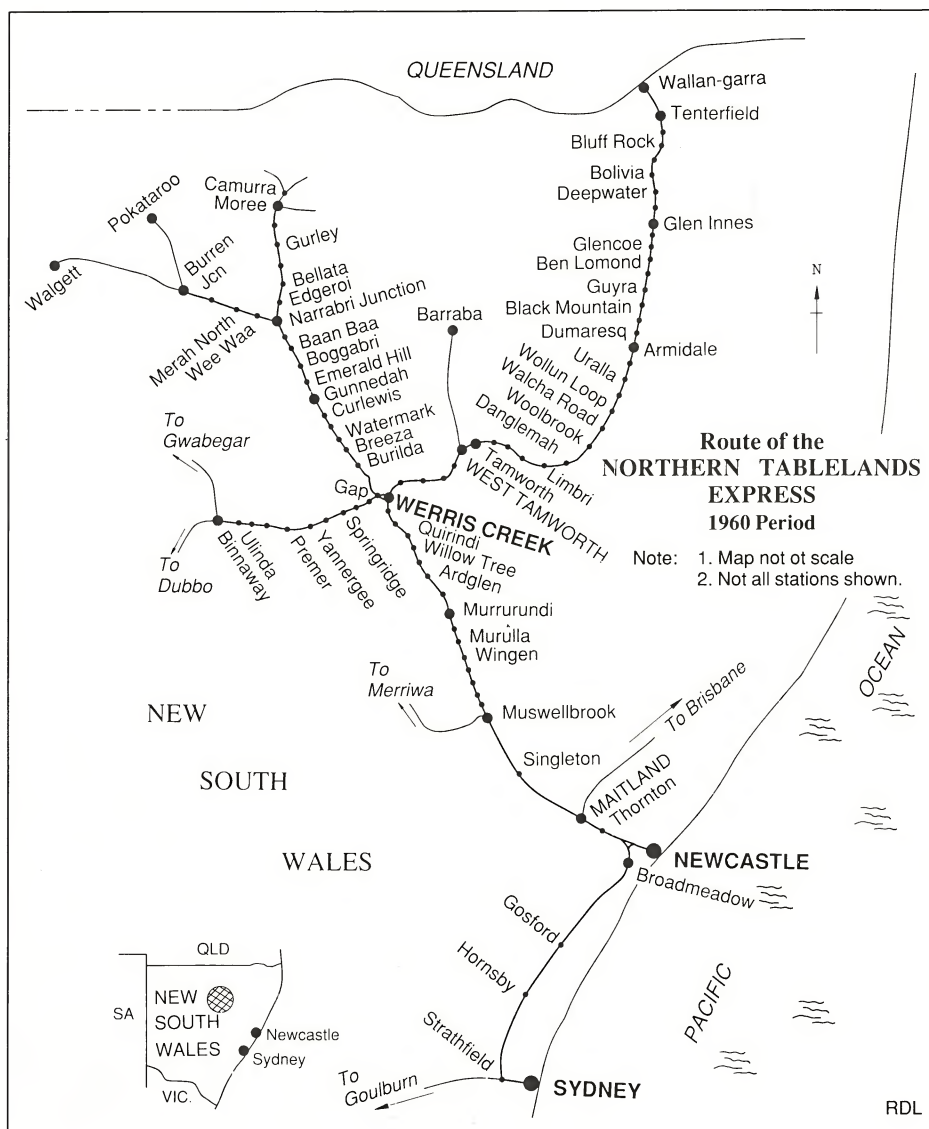
So, it can be seen that both types of working had

things in their favour and the men themselves decided if it was a better proposition to go onto the diagram work or stay where they were. It must be pointed out that not all depots would have 'roster' or 'diagram' work. Large depots like Eveleigh and Broadmeadow would have many men on diagram work, whereas depots like Port Waratah and Binnaway may have no regularly rostered work and therefore no diagram men.

Railmotor Working

Following the success of the 600 class rail car design, incorporating diesel-hydraulic drive, the 900 class long distance sets were developed. They were introduced (briefly) to the North Coast Daylight Express, then to the Canberra-Monaro Express and the Far West Express services. In 1959 and 1960, two more sets were built to replace the locomotive-hauled Northern Tablelands Express trains operating between Sydney and the North-West and New England areas.

In April 1959, the first





By 1960, the steam-hauled Northern Tablelands Expresses had been replaced by self-propelled DEB railcar sets. In steam days, the train was worked by Werris Creek 'diagram' crews between Werris Creek and Broadmeadow, returning home the next day. In late 1954, 3533 works hard up the short section of 1 in 66 grade toward Hanbury Junction with the 348 ton train. Engine 3533 was the first of its class to be withdrawn from service, in February 1959.

M. Farrell

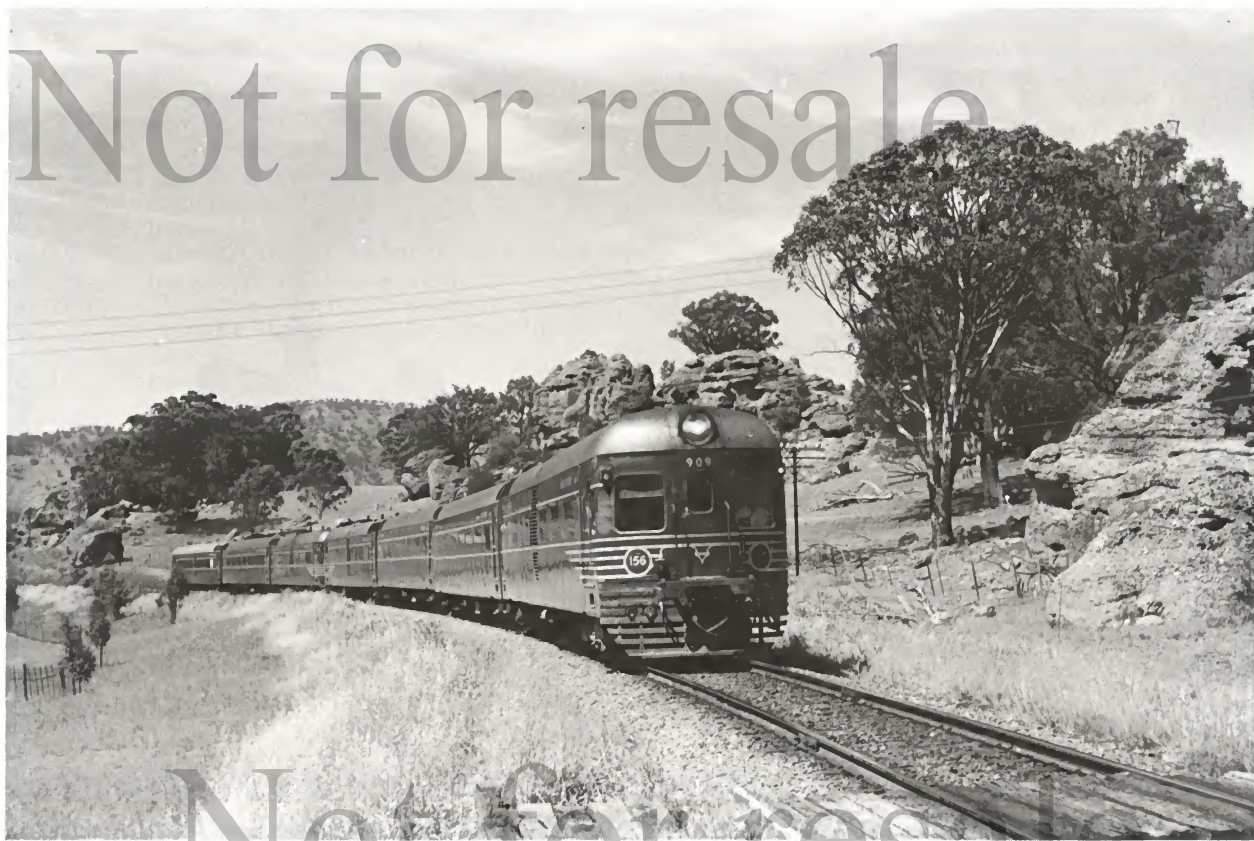
The 900 class commenced service in the North-West area of the state in 1959. Six Werris Creek drivers were initially trained to work it, including Bruce Griffey, shown here at Werris Creek station in 1959. In those days, it was possible to post a letter in the brakevan, utilising the letter-box slot (shown here) mounted in the side of the car.

Photo: Anonymous 'Tablelands R.R.R. Girl!'

three-car train 900 class set was brought to Werris Creek to replace the 600 class on the Werris Creek-Moree run, prior to the introduction of the seven-car set on the Northern Tablelands Express. Werris Creek driver Stan Marney went to Sydney to bring it to Werris Creek, with a pilot driver from Sydney to Broadmeadow. (A pilot driver is a 'local' driver, in this case either an Eveleigh or Broadmeadow man, used to assist or pilot the rostered driver through a section over which he is unaccustomed to travelling, to explain the location of speed boards, speed restrictions and signals).

As the train differed from other rail motors, it was to undergo trials and tests on the Moree and Burren runs to iron out all the bugs. At the same time, the Loco Inspectors had won the right to train the drivers. They had to undergo training themselves, then impart their newly acquired knowledge to the drivers, so it was virtually 'the blind leading the blind'. However, those first few drivers gained a knowledge and experience through trial and tribu-





Above: October 1965, and PF909 leads DEB set 156 up the Pages River valley, past the large rocks, heading for the scheduled crossing with the up service at Pangela loop. At Werris Creek, the leading four cars will continue on to Armidale and Glen Innes, while the rear three cars will spend the night in Moree.

John S. Glastonbury

Above Right: Too fast for the camera, PF907 leads DEB set 156 on No.23 down Northern Tablelands Express out of Boronia No.4 tunnel, between Cowan and Hawkesbury River on its long journey to the north.

Doug Askew

Below Right: With motors humming in readiness to work No.22 up Northern Tablelands Express, cars 958, 751, 854 and 910 stand in Tenterfield yard early on the morning of 30 December 1980. A Werris Creek driver has prepared the train and will work it home after spending the night in Tenterfield barracks. *John Currey*

lation that was to enable them in later years to assist the fitters who did not have this earlier introductory training.

Chief Rail Motor Fitter, Frank Gribble was not permitted to drive the rail motors any more and all movements had to be made by a qualified driver. This was the reason Stan Marney went to Sydney to pick up the set. The training staff comprised: Chief Rail Motor Fitter, Frank Gribble; fitter, Bob Fox; senior electrician, Frank Houlihan; electrician, Laurie Scarfe; Locomotive Inspector, Cedric Fraser.

I was rostered to take the set on its first public passenger service one Monday morning in April 1959 on train No.19 (which connected with No.13 Glen Innes Mail) from Werris Creek to Narrabri and to return as No.22 to connect with the loco-hauled Northern Tablelands Express at the 'Creek. (From my recollections the first set comprised PF907, TCR861 and HPF954). It was quite an experience

in the cramped cab, as I was trying to learn a new concept in railcar working whilst actually driving the train. At the same time, fitters and electricians were bursting in to check lights and gauges, not to mention a sticky-beaking Traffic Inspector.

With the introduction of the next four cars in 1959, it was announced Werris Creek men would work the seven-car 900 class set to Sydney, Glen Innes (later Tenterfield), Moree and Burren, or indeed wherever it ran. The new four-car set would operate between Sydney and Glen Innes and detach or amalgamate with the three-car Moree set, depending on direction, at Werris Creek. It would operate on alternate days to the existing eight-car, air-conditioned RUB set, which was still steam hauled.

This announcement (of the Sydney and Glen Innes running) led to the senior drivers at Werris Creek stating they wanted the new running them-





The three-car set forming the Moree portion of the train (HPF957, TCR861, PF903) rests in Moree loco on 18 February 1983, accompanied by 4835 and 4869. The carriage cleaners are busy readying the cars for the next day's return service to Werris Creek, where the trio will amalgamate with the four cars from Glen Innes for the journey to Sydney.

John Currey

selves, demanding preference over the fellows junior to them (myself included) who had been operating the rail motors, and particularly the 900 class, since their inception. However, the administration in Sydney said these drivers (Johnston, Marney, Taylor, Stockbridge, Boehme and Griffey) had been originally prepared to do the work at lower wages and without penalty rates, etc., so they were now to be given the benefits of the new working.

From this, we then had to learn the road between Broadmeadow and Sydney, as well as between Armidale and Glen Innes. What opposition we had from some of the Broadmeadow and Eveleigh crews, who objected to us running through their depots! In order to learn the roads, we were to travel with the crews on the engine of the regular trains and take notice and ask questions about the various aspects of the trip. We would present ourselves at their engine with the necessary authority to ride with them. Some drivers would grudgingly say, "I have to take you", but they never spoke for the whole trip, although some went out of their way to be of assistance. On one occasion, we rode the 38 class on the midday Newcastle Flyer, but everything was made quite uncomfortable for us.

However, we overcame this and other problems and the set went into regular traffic on the Northern Tablelands Express service on 22 June 1959. Werris Creek drivers worked the train for almost all of its

twenty-four years of operation in this area. The second set went into service on 20 November 1960.

With my long association with this train, I was to develop a method of driving the 900 class which brought high acclaim from the buffet staff and train crews, but which was suspect by the Loco Inspectors. The light weight of the train made it very rough riding, particularly on sharp curves and with heavy braking, and as a result, the buffet girls complained loudly. The first thing they did was to check and see who the driver was, so they could work out the sections where best to walk through the train and serve the passengers. Normally, they had to wait for heavy grades or straight track, when the train was slower and riding a little smoother.

My method was to let the motors and grade work the train, together with an intimate road knowledge. For example, about a minute before the right-away was given at Central, I would engage 'transmission idle' on the throttle, then when the 'right-away' was received from the guard, I would only release the brakes and the train would smoothly move off and attain a speed of no more than 15mph (25km/h) until it got to Redfern. I would then move the throttle to No.1 position only. ("Get up it!" would be the cry from the Loco Inspectors).

By Newtown, I was doing 45mph (70km/h), the maximum speed for the track, and at Ashfield 60mph (100km/h) was reached, all without touching



The up and down Northern Tablelands Expresses (Nos 22 and 23) were tabled to cross at Pangela, six days a week. HPF952 leads the seven-car set on No.22 express up the 1 in 40 grade into Ardglen station, heading for its appointment in Pangela loop. The Train Equipment Officer (travelling fitter) stands in the doorway of the leading car, ready to exchange staffs with the Ardglen signalman.

R.D. Love

the throttle. At Croydon, I would shut the throttle and brake lightly coming into Burwood in order to reduce speed, ready to stop gently at Strathfield on the falling grade. This method brought us into Strathfield right on time, with amazed looks on any faces present. This was a better and smoother method than full throttle out of Redfern, heavy brake at Newtown, full throttle again, heavy braking at Burwood, desperately trying to stop at Strathfield!

This method was adopted right throughout the entire trip. The brakes were never used to reduce the train speed to a lower speed board; the power was shut off early enough at the right spot, to accommodate this smoother method.

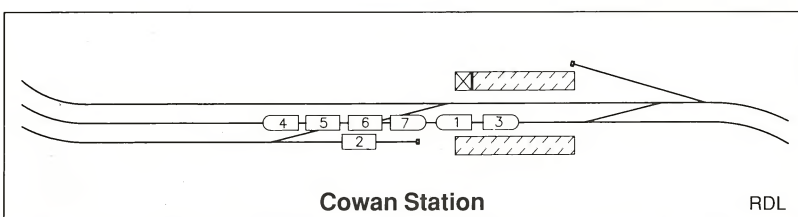
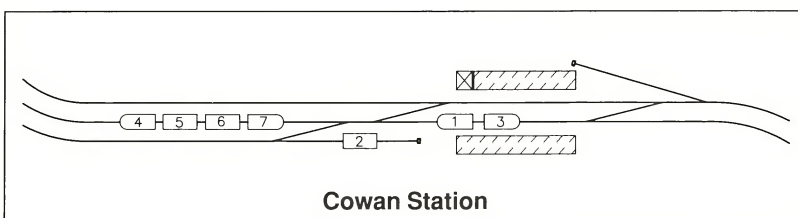
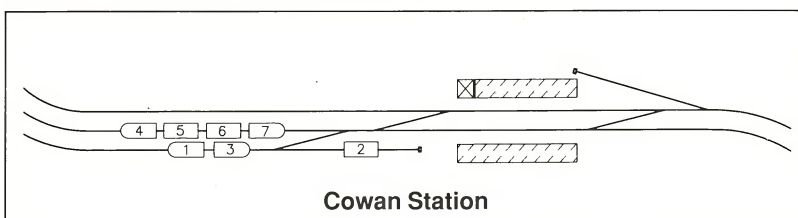
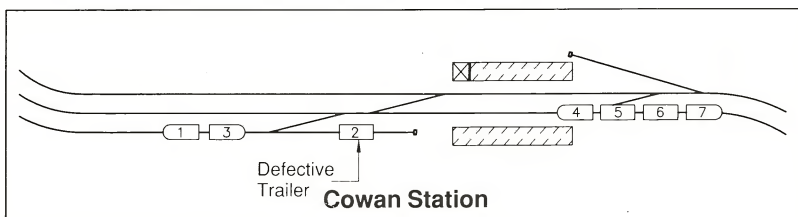
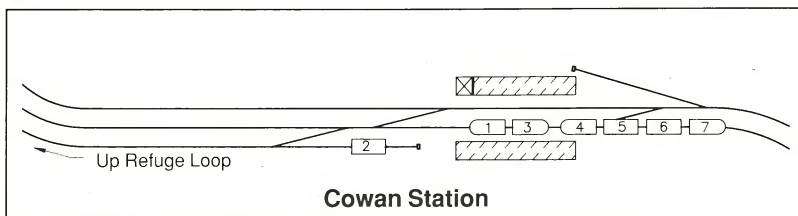
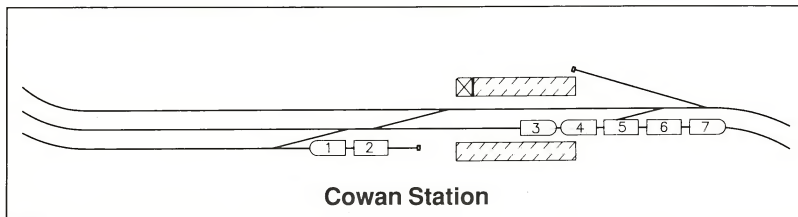
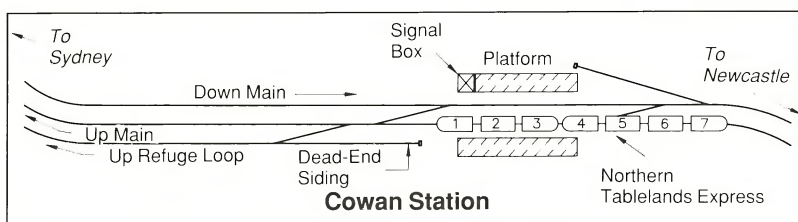
When the second 900 class set started on the run in 1960, the rail motor roster was drawn into the Werris Creek special class drivers' roster, which allowed for twenty drivers. We then reverted to working the Night Mails, etc., as well as the 900 class working on Nos 23/22 Expresses and I then stayed as a special class driver until I retired.

In my twenty-four years of working the 900 class on the Northern Tablelands Express, I had many experiences on the road, both amusing and serious.

Eric Booth was the instructor for the travelling rail motor fitters (all the air-conditioned express trains carried a fitter in addition to the train crew)

and often travelled on the train to impart this knowledge. He also had a great attraction to poker machines. He was coming up on No.23 express one day and was having a little doze in the first class car when the driver, Jack Donohue, was approaching Grass Tree, where it was necessary to traverse the turnout from single to double line. Jack had momentarily forgotten where he was and had to brake furiously for the turnout. Even then, he took the turnout a bit hard, which in turn caused mayhem on the train. A buffet girl was passing by Eric with a tray loaded with money, having just delivered the meals, when she was thrown off balance by the speed through the turnout. The money left the tray and landed on Eric who was jolted awake and called out aloud, "Jackpot! Jackpot!"

Fires on these diesel sets were not unknown, especially as they aged. I stopped at Walcha Road one day and the station master came up front to tell the travelling fitter and myself that there was smoke coming from under the brakevan which was, in fact, the rear power car. We grabbed fire extinguishers and went back to find an oil pipe leaking and dripping oil on to the hot exhaust pipe. It burst into flame just as we arrived. We were being hindered in our work by a ticket inspector who always made a nuisance of himself on the train and offered advice when it was not required. He had his nose



These diagrams illustrate the movements required to remove the defective trailer from the up Northern Tablelands Express.

under the train, giving advice as well as his version of the story, when by accident, the nozzle of my extinguisher was aimed at him as he moved in front of me, his nice suit getting an adequate covering of foam. Exit one ticket inspector!

I had another fire at Armidale on No.23, the down Northern Tablelands service, when the air-conditioning and main control cabinet went up in flames on the rear power car, HPF958. Unfortunately, this also rendered the controls and the two motors on the trailing power car inoperative, but we continued on to Glen Innes on the two remaining motors of the leading car. When we got there, we had to turn both power cars and swap them around so we would have controls on the way home. Of course, this meant the rear car was facing the right way but was still inoperative. On arrival at Sydney Central, the set again would have needed to be remmarshalled to allow it to work to Flemington shed for servicing.

Remmarshalling of the order of the cars was often necessary to overcome problems caused by fires, faulty jumper connections or other reasons. The buffet car on the front section (middle car of three-car Moree part of the train) of No.22 up Northern Tablelands Express had a 'hot-box' (overheated axle box and bearing) at Cowan on one of my trips to Sydney. The car could not continue under such circumstances and had to be detached at Cowan. To continue on would risk shearing off the axle. The fitter and I had to work out the best way to do it with the limited space available at Cowan as well as remmarshall the train in order to retain the correct jumper and air pipe connections. I consulted with the Cowan signalman, so that everyone understood the moves to be carried out. A traffic inspector materialised from thin air and started giving instructions but we had to tell him to disappear, as his ideas were impractical and ridiculous.

We worked out the best way to solve the problem. The defective buffet car was stopped in the platform to detrain the passengers and the buffet stores. The train

After more than a quarter century's constant service, the hard-working DEB sets were showing their age and problems were occurring frequently. In January 1984, 8006 races through Berowra about an hour late, assisting a full seven-car DEB set on No.22 up Northern Tablelands Express. R.D. Love



was then pulled forward and the passengers and stores reloaded into the rear or Glen Innes section of the train. The whole train was then reversed back to clear the up loop points, and secured. I had to walk back to the leading car of the Glen Innes set (fourth car from the front), put in the control handles and apply the brakes on that section as well as apply hand brakes. I then walked back to the leading three cars, uncoupled behind the defective car, pulled forward into the loop and set the defective buffet car back into the short dead-end siding off the Newcastle end of the loop. (This siding was once used to stow the trailer off the Cowan railmotor shuttle in off-peak times many years before). After depositing the buffet trailer in the siding, I drove the leading power car forward and then reversed back on the remaining Moree set power car, effectively giving us two power cars back-to-back. We now found that the jumper coupling receptacles for these two cars were on opposite sides and could not be joined. We then uncoupled these two power cars, ran them forward into the loop, ran the Glen Innes portion forward on the up main and secured it there. I then went over to the coupled Moree power cars and ran them on to the rear of the Glen Innes set. We then had the 4 car Glen Innes set leading, followed by the two Moree power cars back-to-back. The rear power car was not providing traction power (no jumpers) but was left on 'idle' to provide air-conditioning. I must have walked five miles in changing from power car to power car. The delay was fifty minutes. Of course, a major rethink would be required by the 'local boys' on arrival at Central in order for the cars to be worked to Flemington sheds.

As stated earlier, long distances and barrack working were part of the Werris Creek drivers' roster. In the 1960s, the diagram included the following:

- Work No.22 up Northern Tablelands Express to Sydney, return the next day on No.23 Express.
- Work No.8 up North West Mail to Broadmeadow, return on No.419 goods.
- Work No.12 up Glen Innes Mail to Broadmeadow, return No.7 down North West Mail.

- Work No.419 goods to Armidale, return on No.420 goods.
- Work No.7 North West Mail to Moree, return No.402 goods.
- Work No.23 Northern Tablelands Express to Moree, return No.22 next day.
- Work No.23 to Glen Innes (or Tenterfield), return next day on No.22 Express.

In the early days we worked to Burren and returned the next day, but later, when the 900 class was extended to Walgett on one day per week, the Narrabri West men took over working this section of the run, from Narrabri to Walgett, returning the next day.

When approaching the pedestrian bridge at East Maitland one day (on No.22 up 'Tablelands') I noticed a number of schoolgirls standing on the bridge. As I passed underneath, stones rained down all over the front of the train, shattering the front window. I stopped at Metford Signal Box and reported it and then proceeded. Unfortunately, at Hexham, the front window blew out all over the cabin jamming the door shut and I stopped again. The fitter attempted to get into the cab but he could not open the door, he was also unaware what had happened. On arrival at Broadmeadow, he came up to the side window to 'go crook' and then he could see the mess. I had to scrape the glass away from the door and let him in. Railway officials came up to work out how to reverse the car sets (and therefore use the leading power car of the Glen Innes set as leading vehicle) and railway detectives were quizzing me about the incident, but I decided to press on with the window the way it was to avoid delaying the train any further. By carrying out the same procedure as with a broken window in a car, keeping all other windows closed, the wind effect was minimised and we were able to carry on.

On occasions, the 900 class ran out of fuel between Armidale and Glen Innes, causing inconvenience and delay to the passengers as they had to wait for alternative means of transport. I did not experience this myself, although at Black Mountain one day, the No.1 engine just stopped for no appar-



The DEB sets working the Northern Tablelands Express featured a tray service from the buffet, fold-away tables being provided as required. One of the girls, looking a lot like TV personality Penny Cook, from the RRR (Railway Refreshment Rooms, later TCS, Trading and Catering Service) attends to a passenger in HPF956 as No.23 passes through Ravensworth on Friday, 10 October 1980. John Currey

ent reason. There are two No.1 and two No.2 engines on a four-car DEB set and only the No.1 engines drive the air compressors. If both No.1 engines fail, the train is then a total failure because air is not available for the brakes.

A quick check revealed it had run out fuel and a check of the others showed they also had barely sufficient fuel to get to Glen Innes. I instructed the fitter to turn the other No.1 engine to 'idle' to maintain the air, which meant it would not be used to power the train. The two No.2 engines were then used as required. If the road allowed me to get enough power with one engine, then that is all that was used. On the last grade up into Glen Innes, we brought in the good No.1 engine. We made it alright, but it was a gamble. Instructions were then issued in Sydney to top up the fuel tanks in the morning prior to leaving the depot, as well as on the previous night. The motors and the air-conditioning were tested and serviced all night in the depot in Sydney and a lot of the fuel had been used in this way without being replenished for the trip on the next day.

There were many times when we worked till midnight (without pay, of course) on the 900 class in Glen Innes to get it mobile for the next morning. Officially, we were to have eight hours off in Glen Innes, but working until midnight was essential if No.22 Express was to leave on time the next day.

When the units first started to run to Glen Innes, the train failed several times due to frozen motors. Official notification was sent out to drain the radiators on arrival in the winter months. This meant that next morning, we had to climb up a ladder on to the icy, smooth and slippery roof, dragging a cold water hose to poke down the radiator filler intake and stand there in freezing conditions, often windy,

until it filled. After some years, it was decided to put in a hot water plant and fill the radiator with hot water. The next step was to supply a long copper pipe with a hooked top fitted to the rubber hose and with a bit of juggling, the pipe could be inserted in the small filler hole from the ground. Another step was made when the filler pipes were fitted under the car. Much easier!

The general rule at Glen Innes was to get out of bed as soon as the call boy arrived, dress, then go straight to the train, fill the radiators, check the oils and start the engines. After all this had been successfully carried out, return to the barracks, finish dressing and have breakfast. If things had not worked out too well with the preparation of the train, there was no time to have breakfast and so it was necessary to grab a cup of tea 'on the run'. Unfortunately, the 'powers that be' never seemed to want to know about these things.

On 22 February 1969 the New South Wales Rail Transport Museum came to Werris Creek with 3813 on a tour. This was only the second time that a 38 class engine had come to town (the first occasion was one week earlier, also on an RTM tour) and on that day, I was rostered on the 10.30am 'town shunter' with engine 3326. My engine was facing north and I was instructed to take it to loco, turn and proceed tender-first to the Gap, via the Binnaway line, to await the arrival of the tour train. Yard shunter 5311 arrived with the tour via the North West line, we coupled up to the rear of the train and proceeded, via the Binnaway line, back to the 'Creek. Two photo stops were held on the way, with plenty of smoke to please the passengers.

It was the practice for many years for the Railway Commissioner or the most senior executive officer to tour parts of the system, usually one large area

at a time. It was usual for the senior crews in the depot to work these trains (subject to availability and approval of branch heads) and during my career, I worked a total of nine Commissioner's Tour trains.

When Mr Alan Reiher became Commissioner, it was decided that his train, touring from Werris Creek to Narrabri, was not to be a special but was to be a revenue train. I was rostered on with Observer Ron Simpson and Guard Kevin Webber and, when signing-on, was instructed to walk down to the Werris Creek wheat silos, there to pick up part of my train. The train consisted of double 48 class, 26 WTY empty wheat hoppers and a van. We then set back toward the platform to await the arrival of the Commissioner's Train coming from Tamworth. The Commissioner's Train was then attached to the back of the empty wheat train and away we went, heading up the North West line. This was the most difficult train I have ever worked. I was given the same running time as No.7 North West Mail, with what was basically a long goods train. Even more difficult was the requirement to stop the rear observation car on the short platforms, like Breeza, Emerald Hill, and so on, to allow the Commissioner to

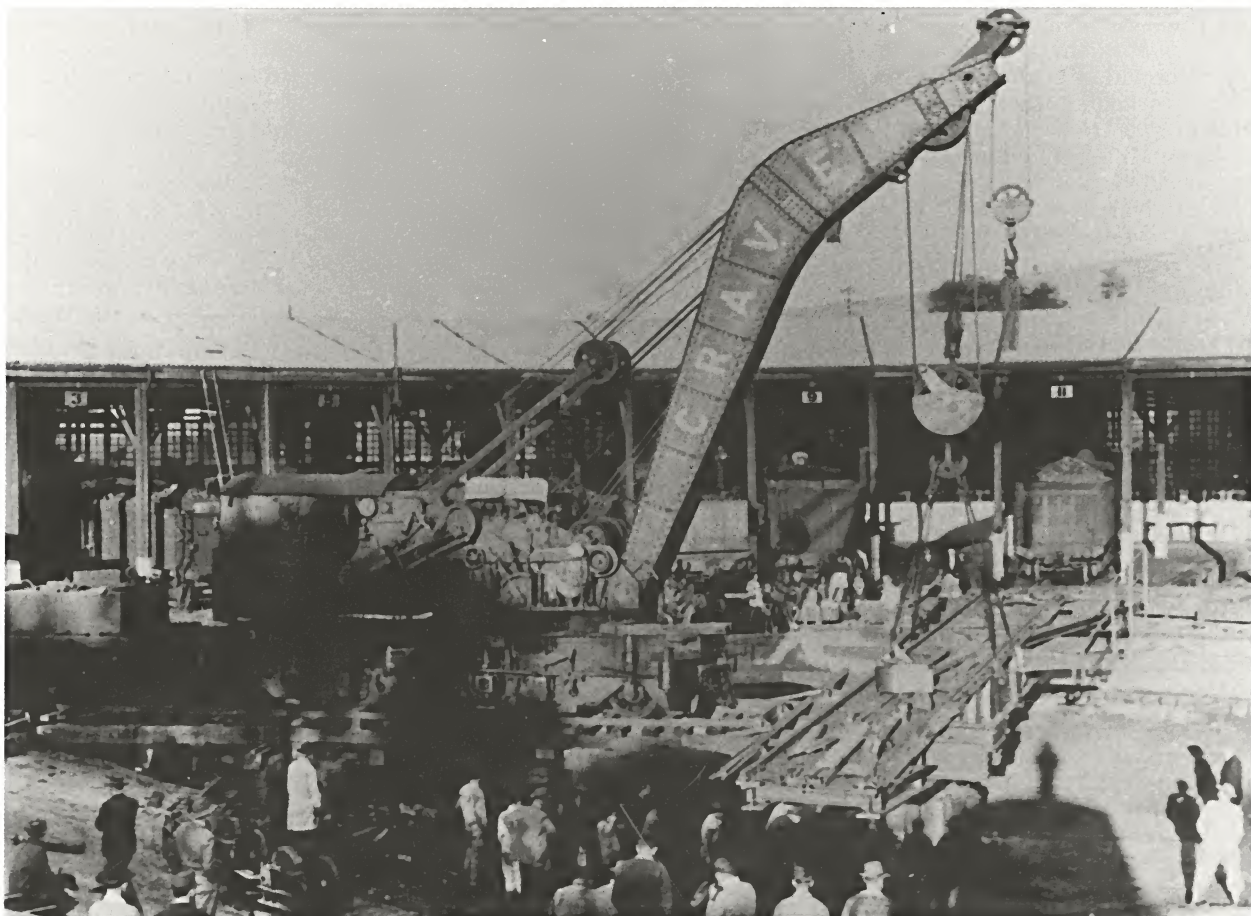
meet the local station master and staff. It was necessary for the guard to leap from his van, run out on to the roadway or into a paddock and hand-signal the instructions when and where to stop. Often, I was out of sight of the rear of the train, and there were no radios in those days.

On arrival in Narrabri, we changed over with a Narrabri West crew, who took over our 48 class engines, while we took their engine. We then proceeded to the rear of the Commissioner's Train, detached these cars from the wheat train, which then proceeded on to Moree. The up North West Mail arrived in the platform, the engine cut off and ran forward and then we pushed the Commissioner's train on the front of the Mail and reattached the engines. It was intended that we would return home passenger and the rostered Mail crew (Moree men) would work the combined train back. The Moree crew had not been advised of the Commissioner's Train working when they signed on in Moree earlier, and refused to work the train. The Loco Inspector advised me of this and I then worked the train back to Werris Creek, although I had already been on duty seven hours. Again, this was a large train, comprising 16 coaching vehicles,



The fastest railmotor of all. The unique CHP38, nicknamed 'Creamy Kate', worked in a number of locations in the state during its forty-nine year career. It spent many years in the Narrandera area, working the level branches to Tocomwal and Hay. In the mid 1970s, it was transferred to Werris Creek for West Tamworth-Barraba working and Werris Creek drivers were trained to work it. In November 1975, the old motor rests in the dock platform at Tamworth.

D. Allerton



The changing face of Werris Creek depot.

Above: In 1954, a 105' turntable was installed in the depot. Broadmeadow's 70 ton Craven crane is standing on a temporary track supported by pig-sties whilst carrying out the operation. Darcy Kermond

Right: A winter's day in 1965 and the shed roads contain (from left) 3665, 5239, 3534, 5242, 5268 and 5909, normal motive power in the area at this time. R.D. Love

Below Right: By the mid 1980s, seventy years after it opened, Werris Creek roundhouse still saw a wide variety of motive power and working. From left, 48115, 4904+4912, 4441, 4884, 7321, 4464 and 4424 occupy the 'bullring', the photo being taken from the roof of 4871. John Currey

hauled by two 48 class engines.

When David Hill became Chief Executive, I worked his train on a number of occasions, including Werris Creek to Armidale, non-stop. I also worked it from Werris Creek to Muswellbrook, (all stations), and it then proceeded on to Merriwa. A few months later, I worked it again from Werris Creek to Narrabri with a 44 class and then on to Moree with green branchliner 4836. Later on the same tour, I was rostered to work the train from Werris Creek to Broadmeadow. Prior to departure, the chiefs decided to stage a surprise visit to Werris Creek Loco and, in addition, the 44 class had a defective staff exchanger and required repairs. We departed Werris Creek South Box forty minutes late and by picking up time in the appropriate sections, I was only four minutes late by Maitland. Unfortunately, we were diverted to the coal road and were still four

minutes down on arrival in Broadmeadow. Some officers on the train took time out to thank me for my efforts.

I worked the Executive Train to Binnaway on another occasion, with a 49 class and made a special stop at Yannergee at the house of retired ganger Mr Peter West and his wife, the fine couple mentioned earlier in my story.

In 1972, the Barraba-West Tamworth loco-hauled service, part of Nos. 13 and 12 Glen Innes Mail, was suspended. A rail motor service utilising Rail Motor No.38 (nicknamed 'Creamy Kate') commenced running off No.13 Glen Innes Mail, doing a round trip from Tamworth to Barraba and reconnecting with No.22 up Northern Tablelands Express. This was incorporated into the Werris Creek diagram and I was immediately qualified for RM No.38 and the subsequent 400 class that later re-



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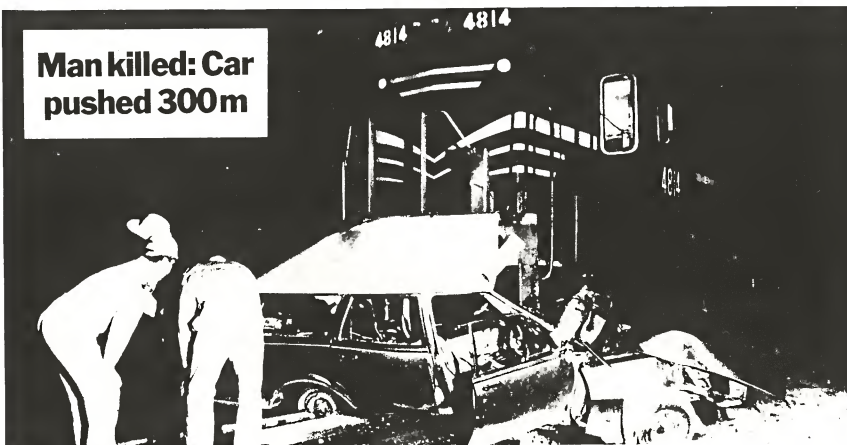
Tamworth, Wednesday, August 4, 1982

25c*

- * P 6—Editorial
- * P 8—Lookabout
- * P 11—Finance
- * P 14—Bridge
- * P 23—Stamp
- * P 25—TV
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 Bulk Deals
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*Left: Branchliner 4814 on the up parcels express after a collision with a car near Tamworth.
 Northern Daily Leader*



Man killed: Car pushed 300m

CROSSING SMASH

A Dungowan man was killed and his station wagon pushed 300 metres down a railway track in a level crossing smash in Tamworth last night.

The collision between a car and a two-car train occurred at the Robert St crossing at about 8.45pm.

By DEIRDRE MARTIN

placed it. Werris Creek drivers would sign on at 1.20am, prepare the motor, work it empty to Tamworth, work to Barraba and return, then follow No.22 Express out of Tamworth, home and stable. The working of this service to Barraba was later taken over by the local West Tamworth crews.

On Tuesday night, 3 August 1982, I was driving 4814 on the up Parcels Express when we struck a car on the Robert St. level crossing in Tamworth. The car had been running parallel with us on the observer's side of the train (I did not even know it was there) when it suddenly overtook us and immediately turned sharply left and on to the level crossing ahead of the train. We struck the vehicle and I was still unaware of its presence until we actually hit. We pushed the car for 300 metres and it was securely wedged under the engine when we finally stopped. My mate had been involved in a fatal level crossing smash at Gunnedah only a week beforehand and so he remained on the engine whilst the guard and I examined the car. We immediately saw we could do nothing for the driver, who was killed instantly.

We had to wait for the police and ambulance to arrive and after the body was removed, we disengaged 4814 from the car and examined the engine for damage. We then proceeded to Duri where we were relieved by another crew.

An enquiry was held next morning, with the statements from us to the police being quite sufficient as evidence. A coronial enquiry was then held

(also attended by the observer and myself), but no blame was attached to us as the deceased had not stopped at the crossing at all. The level crossing lights had not been installed at the time.

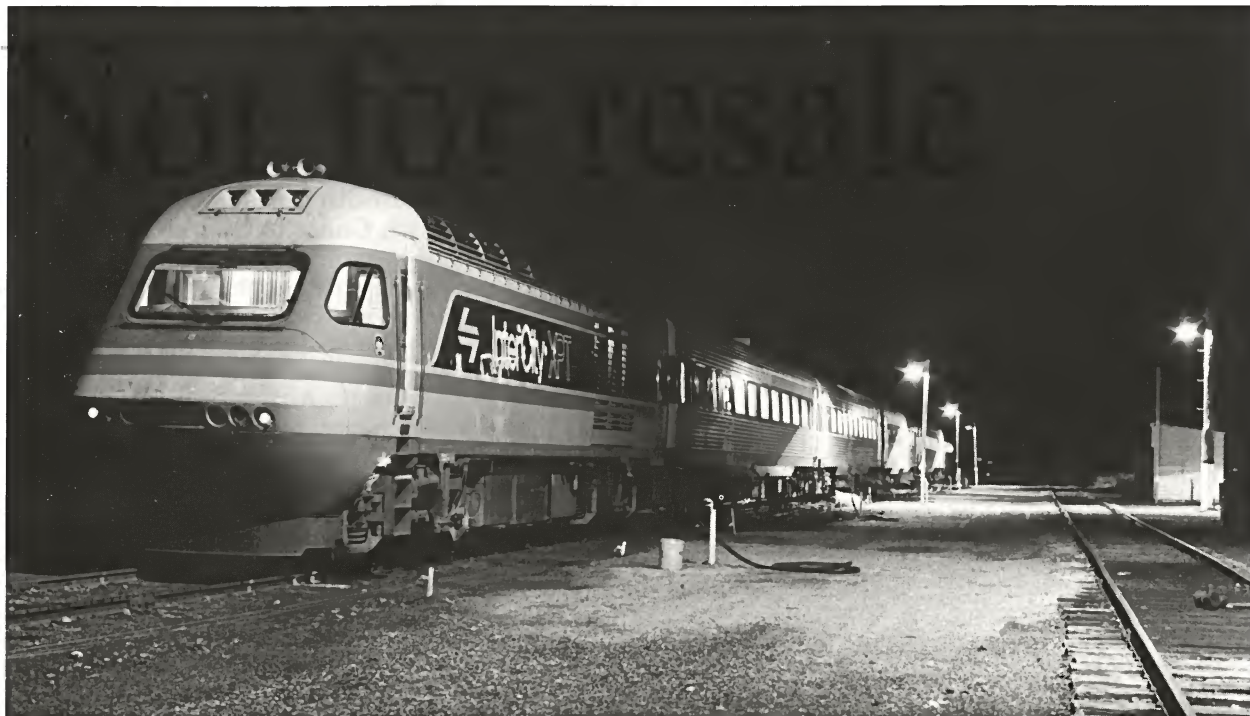
When the XPT units began working the Northern Tablelands Express services in the area in 1983, I was trained to work them. At first, the crew on the XPT power car consisted of a driver and observer, and we worked from Werris Creek to Broadmeadow, went into barracks, and returned the next day, or to Glen Innes (or Tenterfield), camped in the barracks there and returned the next day. This working was later changed to Werris Creek to Maitland (change over, return same day); work No.13 Mail to Uralla, change over with an Armidale crew, return on the XPT to Werris Creek; work XPT to Uralla, change over and work No.12 Mail home.

On 31 January 1985, I worked No.23 Northern Tablelands XPT to Uralla, changed over with an Armidale crew and returned on No.8 parcels train. This was my last job before retiring and after clearing my holidays and long service leave, which took me to October 1986, I finally completed my service.

During my career, I was often in conflict with supervising and administrative officers, because I always chose to do my job to the best of my ability and put every effort into satisfying the customers. I was never late for work and always made myself available if at all possible, even at the shortest notice.

Right: The XPT sets took over the running of the Northern Tablelands Expresses from the DEB sets in 1983. At the time, XP2013 was unique in having the Casino municipal crest below the side window rather than the usual "City of..." lettering. The insignia is clearly visible in the yard lights of Tenterfield as the XPT set rests between runs in the early hours of Monday, 25 March 1985.

John Currey



Epilogue.

I enjoyed my work as an engineman, having progressed from the steam days where the work was hard, conditions often unpleasant in wet and cold weather, with the barracks being archaic to say the least.

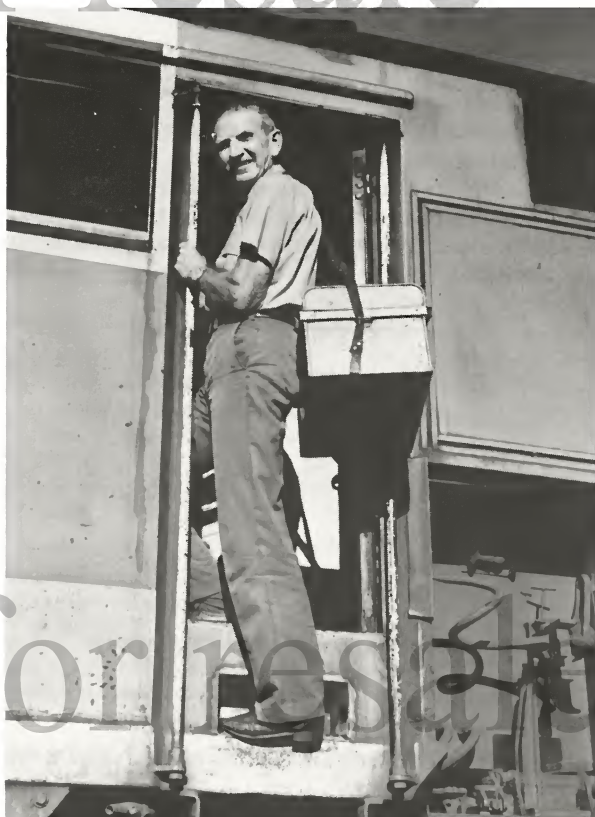
Most of the locomotive enginemen that I came across took pride in their work and, in the early days, needed an extremely good road knowledge. Headlights on locomotives were rare, only being fitted to 12, 30, 32, 35 and some 50 class engines. The rest had kerosene lights which continually went out, thus putting an additional strain on the men in fogs and in darkness. Ultimately, headlights became the order of the day on most steam engines and made work a little easier.

The arrival of the diesel-electrics brought a degree of comfort to the enginemen: heated cabs, less manual work and, of course, comfortable seats. This was quite different from the life we had been used to for many years.

In addition to the improvements in conditions on the road, barrack accommodation improved, with the provision of single rooms and air-conditioning.

Taking all the previous thoughts into account, if

I was asked to explain the most enjoyable aspects of my forty-year career, it would have to be the cordial friendships which generally developed between enginemen from the various depots when they met in barracks, the homes-away-from-home. [▲]



Complete with his old tin tucker box (which never fell off the side of a 36 class tender), Bruce climbs into the cab of 44216. For many years, tin tucker boxes were a trade mark of NSW enginemen and guards, and some are still used in the country depots. This particular box was made by a Taree signalman in 1944. When Bruce Griffey retired after 43 years in loco, he had enough experiences to fill a book.

John Currey

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Bruce Griffey Life of an Engineman: 4

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Ron Preston On the South Maitland Railways in 1930

Acknowledgments

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Robert Booth and Ray Love South Coast in Steam

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Units of Measurement

Since the essays in this book deal with a period when the Imperial system of measurement was used in Australia, that system has been retained. As an aid to conversion for those who are so minded, the following factors may be used:

1 inch	=	25.4mm	1 gallon	=	4.546L
1 foot	=	305mm	1 pound (lb)	=	0.454kg
1 yard	=	0.914m	1 ton	=	1.016t
1 mile	=	1.609km	1 horsepower	=	0.746kW

A mile could be divided into 80 chains (ch) of 22 yards (66 feet) each.

At the date of currency conversion (14 February 1966) £1 equalled \$2. However, inflation both before and after this date makes conversion of monetary amounts meaningless unless various economic indicators, including such inflation factors, are known.

The publishers of *Byways of Steam* welcome additional information expanding or correcting details in the various essays.

