

SIGNALLING RECORD SOCIETY (VICTORIA)

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Deadline for Jan. 1990 issue is 18 December 1989.
NEXT MEETING: Friday, 17 November 1989.
VENUE: A.R.H.S. Library Room, Windsor Rly Station.

SIGNALLING ALIENATIONS

- 16.8.1989 ALUMATTA. The intermediate electric staff instrument was removed from service. Delete from list on page 212, General Appendix. (O 616/89)
- WN33/1989 DIAMOND CREEK. Commencing forthwith Diamond Creek will be opened as a staff and ticket station from 0450 hours and closed by No 1712 Hurstbridge Electric Suburban passenger train each weekday. (O 2375/89)
- 11.8.1989 NORTH GEELONG A BOX. The following signal and point alterations were carried out as a stage of yard rationalisation.
1. Levers 28 and 42 were sleeved normal and lever 41 became a Pilot lever.
 2. Points 29 and derail 37 were removed.
 3. Points 28 were relocated 30 metres in the down direction.
- 14.8.1989 NORTH GEELONG A BOX. Further signal alterations were carried out:-
1. Down three position home signal No 3 was removed.
 2. The aspects on posts 2, 51 and 53 were altered as follows:-
 - a) post 2 - B arm will display stop or medium speed warning only.
 - b) post 51 - B arm will display stop or clear medium speed only.
 - c) post 53 - B arm will be fixed red.
- The A arms on these posts will remain unaltered. (O 619/89)
- 21.8.1989 DUNDOLLY-ULTIMA, KORONG VALE-KULWIN and EAGLEHAWK-INGLEWOOD. The Train Staff and Ticket system was abolished and replaced by the Train Order system. The Dundolly-Ultima (and Robinvale) line is now regarded as the main line with the other two becoming branch lines for train operating purposes. Employees are therefore required to

attend 60 minutes prior to a train requiring to be turned on or off the main line at Inglewood and Korong Vale. Train Order Territory boards have been provided at Dunolly, Ultima and Kulwin. (NOTE - Ultima-Robinvale remains staff and ticket for the time being.) All trains operating in the above area will use Channel 4 on the Train to Base radio system.

ULTIMA is an attended terminal station with home signals and plunger locking. The TO boards are located adjacent to the down home signal. KULWIN is a terminal station without signals and the points are secured by hand locking bars. The TO boards are located 300 metres on the upside of the facing points.

DUNOLLY is an attended Terminal Station with fixed signals and plunger locking. The TO boards are provided adjacent to the home signal on the Inglewood line.

EAGLEHAWK must be attended at 60 minutes prior to the passage of a train to or from the Inglewood line. A train order may be issued through Eaglehawk from the Bendigo line to the Inglewood line PROVIDED the junction points have been set correctly and the necessary signals have been cleared. CROSSING OF TRAINS. When trains are to cross on these lines, 24 hours notice of the scheduled cross is required to be submitted to the Regional Operations Manager, Northern and the Train Controller so as to ascertain as to whether such crossing location is available for use.

Trains may cross at Bridgewater, Inglewood, Korong Vale, Boort, Quambatook, Ultima, Charlton, Wycheproof, Berriwillock, Sea Lake and Kulwin. An employee must be on duty at least 60 minutes prior to the train in order that the signals may be tested or audible track warners may be placed on the line at stations not equipped with signals.

POINT SECURITY AND MASTER KEYS

Six large master keys (Nos 65-70) have been provided, four to be kept at Dunolly, one at Bendigo D Box and one at Korong Vale. All trains must carry a master key.

Plunger locking is provided at Bridgewater, Korong Vale, Boort, Quambatook, Ultima, Charlton, Wycheproof, Berriwillock, Sea Lake and Dunolly.

Large master key locks are provided at Leichardt, Llanelly, Kurting, Borung, Barraport, Gredgwin, Oakvale, Cannie, Lalbert, Meatian, Wychitella, Buckrabanyule, Barrakee, Charlton GEB Siding, Teddywaddy, Glenloth, Wycheproof GEB Siding, Dumosa, Nullawil, Warne, Culgoa, Boigbeat, Ninda, Nyarrin, Nandaly, Pier Millan and Mittyack.

Hand locking bars are provided at Kulwin.

19.8.1989 INGLEWOOD. The down home signal was reinstated on the Bridgewater line and is operated from a quadrant adjacent to the junction points. The employee on duty will obtain the T.O. from the Train Controller for the train to proceed from the home signal to Korong Vale or beyond on the Ultima line. When the train arrives, the employee will hand the T.O. to the driver who will verify the order with the Train Controller. He will then obtain the master key from the driver, operate the junction points and clear the home signal. After the train has cleared the junction, the points must be restored to normal, the master key retrieved and returned to the driver. The train may then continue its journey.
(O 610/89, O 637/89)

- WN35/1989 SHEPPARTON. Circular O 497/89 is cancelled and circular O 597/89 is issued. Amended instructions regarding the operation of trains through Shepparton on Train Orders. (O 597/89)
- WN35/1989 SPENDER STREET. With the introduction of the Passenger Information Display System (P.I.D.S.) at the Spencer Street Passenger Terminal, the platforms will be divided into sections as hereunder:-
Platform 1 - Outer, North, Centre and East.
Platform 2-7 - North, Centre and South.
Platform 8 - North and Centre.
Marks are painted on the platforms to indicate the various sections and station staff will place stopping board at the appropriate place to indicate where the train must come to a stand to ensure correct information is given on the P.I.D.S. screens. The stopping boards consist of a white round disc with a black border standing about 1 metre in height. (O 648/89)
- 23.8.1989 WEST FOOTSCRAY. All the units on signal post 35 were lowered 700mm. (O 2388/89)
- WN36/1989 SALE-BAIRNSDALE. Amended speed and load limits were published for this section. Only the following locomotives of the A, B, N and S class locomotives are permitted to operate over the Avon River bridge - A62, A70, A71, A73, A77, A78, A79, A81, A81, B61, N451, N452, N453, N455, N459, N461, N463, N465, N466, N468, N469, N470, S301, S312 and S317. The S class locomotives must not multiple over the bridge. (O 670/89)
- 1.9.1989 NUMURKAH. The following alterations were carried out:-
1. The B pattern annett locked crossover at the up end of the platform was abolished.
2. Up home signal post 3 was abolished.
3. Levers 7 and 8 were sleeved normal.
Amend diagram No 16'73 accordingly. (O 682/89)
- 5.9.1989 WANGARATTA. The following alterations were carried out:-
1. Signal posts 10 and 12 were abolished.
2. The left-hand disc on post 13 was abolished.
3. 19U, 15D and 18 points were abolished.
4. Lockbar 16 was abolished, lever 16 becoming a pilot lever.
5. Levers 8, 9, 20 and 26 were sleeved normal.
Amend diagram No 6'87 accordingly. (O 683/89)
- 7.9.1989 PYRAMID. All fixed signals were abolished and the plunger locking replaced by master key locks (the WN actually says staff locks but the line is worked by train orders - DEL) and WSA levers. The level crossing is provided with a predictor on the up approach section and the notice board was altered to read 40 km/h applicable to stopping trains. The board is located 20 metres from the up end of the platform. The existing manual control push button at the up end was retained for shunting movements. (O 687/89)
- 20.9.1989 BELL. Signal BEL111 will display a Normal Speed Warning aspect whilst signal BEL107 is at the Stop position. This will occur when Bell signal box is switched in and lever 107 is reverse, or when the signal box is switched out and the track is clear to a point 400 metres in advance of BEL107. (O 2435/89)

- 20.9.1989 NORTHCOTE. Signal T252 has been altered to display a Normal Speed aspect whilst T240 is at the Stop position. This will only occur provided the track is clear to a point 530 metres in advance of T240. (D 2436/89)
- 20.9.1989 GREENSBOROUGH-ELTHAM. A staff balancing magazine was provided for the above electric staff section. (D 2437/89)
- WN41/1989 GENERAL APPENDIX - Guard/Conductor. Circular D 718/89 supercedes circular D 743/88 relating to starting locomotive hauled trains. The conductor is to have a clear view of the train, sound the pocket whistle, advise driver via radio that platform work complete and train ready to depart, observe until train clear of platform then advise driver accordingly. If power doors are provided, the must be closed before advising driver that platform work has been completed.
- 5.10.1989 STRATHMERTON. A level crossing predictor was provided for up trains at the Goulburn Valley Highway level crossing. A healthy state light was also provided. (D 734/89)

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JOHN SAXBY --- Salute to a Railroad Giant
Inventor of Interlocking

Just over a century ago - on 24 June 1856 - there was born in Britain the first primitive system of the interlocking of switches and signals that resulted in the introduction of interlocking on the U.S. railroads in 1870 and the eventual employment of this valuable safety device on railways throughout the globe.

Interlocking was the invention of John Saxby, foreman employed by the London, Brighton and South Coast Railway Company of England. Born in 1821, Saxby entered railroad service as a youth and while working in the Brighton locomotive and car shops and assisting in the making of the simple signals then in use, hit upon the clever idea of interconnecting switches and signals through an interlocking frame.

Saxby's epoch making patent of 1856 was for "a mode of working simultaneously the points (i.e. switches) and signals of railways at junctions to prevent accidents". Leaving the railroad service and commencing business as a signal manufacturer on his own account, Saxby in the year 1860 took out a further patent for what was really the first true interlocking device, with switches and signals operated by independent levers and the locking between them set in motion immediately one was moved, releasing being impossible until the lever determining it had been moved through its entire stroke.

The idea behind the first interlocking machine was really simple. The levers themselves acted directly upon swinging pieces, pushing them to one side, and these in turn were connected by bars to others which formed obstacles in the path of any lever it was desired to lock. Provision was made only for straight locking and releasing, conditional locking then not having been considered necessary.

This type of locking frame was used at the Victoria Station, London, on the London, Brighton and South Coast Railway, in the so-called "hole-in-

the-wall" signal tower, as well as in several other towers in the London area. In those early days, it was the custom to mount the signals above the towers, connecting them to their levers by rodding, which of course meant that there were no detectors in such installations.

In the early eighteen-sixties, John Saxby took into partnership John Stinson Farmer, who vacated his job as Assistant Traffic Manager of the London, Brighton and South Coast Railway on the setting up of the firm of Saxby and Farmer, at Kilburn, London. Saxby and Farmer became the sole signal contractors to the London, Brighton and South Coast Railway and London and North Western Railway Companies and soon began to supply other railways in Britain and elsewhere.

The year 1867 was remarkable in witnessing the origin of "catch-handle" locking. Up until then, interlocking mechanisms had acted directly on the lever and experience had shown that some types were liable to become strained excessively, while much wear arose from the manner in which the locking was set in motion.

Various new locking devices were produced and in 1871 Saxby patented a form of motion for effecting catch-handle locking which, perhaps more than anything else, has caused his name to be remembered. In this patent, Saxby introduced a principle which has been generally followed ever since in catch-handle locking as now understood, whatever its actual form of construction.

The principle in question is that the lifting of the catch-handle moves the locking mechanism through a certain travel, after which the latter remains immovable, or practically so, while the lever itself is being moved. The dropping of the catch-handle at the termination of the stroke causes the locking mechanism to travel once more in the same direction as it did when the catch was raised and so release any other lever or levers depending on it.

Saxby effected this by mounting a slotted rocker beside the lever, one end of which was connected to the locking mechanism. In the slot in the rocker was pin attached to the catch-rod. Lifting the catch raised the end of the rocker and moved the locking mechanism, bringing the slot in the rocker concentric with the lever pivot so that the rocker did not move while the lever was moving. When the catch was again released, however, it necessarily shifted the rocker once again in the same direction and hence also the locking mechanism.

In 1871, Saxby took out another patent in which he abolished the ordinary frame quadrant by providing a second slot in the rocker, an attachment on the lever engaging in recesses cut above this slot. This design does not appear to have been employed to any extent, but in 1874 Saxby patented a form of locking frame of which large numbers were supplied to all parts of the world. It introduced what became, with slight modifications, the "rocker and gridiron" machine.

America first became seriously interested in Saxby's apparatus around 1869 thanks to studies undertaken by Ashbel Welch who had introduced in 1863 the first block telegraph working in the U.S.A. when Chief Engineer of the United New Jersey Canal and Railroad Companies.

After visiting Britain, Welch was so impressed by the Saxby and Farmer apparatus in use at Crewe and elsewhere that he urged his management to make a trial of interlocking. As a result, the United New Jersey Companies installed a nine-lever frame at a junction at East Newark, New Jersey, on part of their system leased to the Pennsylvania Railroad. This introduced into the U.S.A. the rocker form of catch handle actuation of locking which, in the end, became universal for American mechanical frames - except small ground frames - and was even applied to one form of electric power frame made by the former Federal Signal Company.

The rocker form of catch-handle actuation was applied by degrees not only to Saxby and Farmer type frames but later in the U.S.A. to the Standard, National and Johnson types,

but in these cases the rocker was below the quadrant, out of sight. In the Johnson frame, the rocker was carried on, and thus moved with, the lever and was rigidly connected to the catch-rod, while the pin of the connection to the locking itself travelled in the slot of the rocker, the exact reverse of the original Saxby arrangement. Oddly enough, although the rocker motion has been almost given up by now in Britain, it remains common in the U.S.A. for mechanical frames.

So-called "grid-iron" or "flop" locking continued in use in America down to 1891, a notable installation being in a large tower brought into working in 1884 at Grand Central Terminal, New York City. This was superseded in 1891 by what was called the "Saxby & Farmer improved" locking, the invention of James T. Hambay, American patent of 2 July 1889.

Hambay's apparatus used the Stevens wedge principle but the tappets ran lengthwise in the locking box, and were called "cross-locks". The locking box was still above the floor, and the rocker mechanism remained as before. In the year 1899, the New York tower in question was replaced by one fitted with a low-pressure pneumatic frame.

Saxby & Farmer were concerned with nineteenth century signal developments in lands far and wide. After capturing much of the British market for signal equipment, they firmly established themselves, through agencies in lands like France and Belgium, India and Australia.

John Saxby himself continued actively at work until 1900, when he was - as he himself put it "eighty years young". Retiring to Hassocks, a pleasant country town in Sussex County, England, he died in 1916, and seven years later the firm he founded was incorporated with others into the Westinghouse Brake & Saxby Signal Company, renamed Westinghouse Brake and Signal Company in 1935.

John Saxby's long span of vigorous life witnessed the commencement of steam traction for passenger trains on the Stockton and Darlington Railway in 1825, the opening of America's first railroads, the extension of rail communications to

all parts of the world and the development of signalling from the first simple fixed signals, and his own double junction equipment, through the mechanical signalling era, down to the application of the various systems of power working and automatic protection, the evolution of which is still proceeding in continuation of

his own pioneer and far-sighted endeavors of a century ago. As the "number one" signal engineer of the nineteenth century, and the great pioneer of interlocking, the railroad world takes off its hat to John Saxby for the invention of that truly invaluable safety device that today is a standard piece of equipment throughout the five continents.

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BOOK REVIEW

(From time to time there are books published that appeal not only to general railway enthusiasts but also to historical and signalling specialists like ourselves. It is proposed to run an occasional series of reviews of these books for the benefit of readers. If you have any comments to make or perhaps care to review a book yourself, please write to the editor.)

ADAMSTOWN via FERNLEIGH

by Ed. Tonks. 116pp.

Published by New South Wales Rail Transport Museum, 1988.

The author states in the foreward that "it is not a definitive work but merely an attempt to create an awareness of the line among railway enthusiasts". This it does admirably by reproducing over 160 photos of the line and its trains. Most are black and white but there are a number of colour photos throughout the book.

The cover photograph shows a pair of 47 class locomotives (at least that's what we are told, the angle makes it impossible to see) hauling a down coal train through typical Belmont countryside and approaching Redhead station. This is indicative of the contents of this book. There is no text as such but all the photographs are accompanied by extended captions and after reading through you feel as though you have read a book on the area.

A map is included showing the line together with all stations, junctions and colliery sidings. Also included are a number of track and signal diagrams clearly illustrating the arrangements in force at most places. It is a pleasure to come across a book that pays this much attention to detail and yet remain interesting to most readers.

There are many reproductions of colliery wagon tickets and at the end of the book is an extensive bibliography, a list of important dates and a list of references to the line in the local newspapers. One final list which is not often seen is one of all the locomotives that appeared in the photographs.

This soft cover A4 size book represents excellent value for money and should be on the book shelves of all enthusiasts who wish to re-live the nostalgic days of the Belmont line. The author of this review was fortunate to have travelled on the line during 1966 whilst the 30 class tanks were in command. (D.E.L.)

(continued on page 116)

OPENING OF NEW LINE FROM MURRABIT TO STONY CROSSING

The above line was opened for Passenger and Goods traffic on FRIDAY, 16 MARCH, 1928.

The particulars of Stations on this Line are:-

NAME	HEIGHT ABOVE SEA LEVEL	MILEAGE FROM MURRABIT	MILEAGE FROM MELBOURNE
Ballbank	239 feet	4 1/2	199
Nancurrie	235 "	9 1/2	204
Wetuppa	229 "	17 3/4	212
Coobool	230 "	24 1/2	219
Dilpurra	220 "	30 3/4	225 1/4
Tueloga	217 "	35	229 1/4
Poonboon	216 "	39 1/2	234

FIXED SIGNALS- An Up Home Signal for this Line is provided at Murrabit, and a Down Home Signal at Poonboon. An Up and Down Home signal is provided at the Lift Bridge over the Murray River near Murrabit.

Add Murrabit station "Home 2", Murrabit (Murray River Bridge) "Home 2", and Poonboon "Home 1 Down" to pages 295 and 296, Book of Signals.

MURRABIT AND POONBOON- The points in the Main Line as Down end of Murrabit and Up end of Poonboon are secured by Plunger Locks. (For working of Plunger Locks see General Appendix).

BALLBANK, NACURRIE, WETUPPA, COOBOOL, DILPURRA AND TUELOGA- The Points in the Main Line at each end of these Stations are secured by Hand Locking-bars and Standard padlocks, and Scotch blocks similarly secured are provided wherever necessary to protect the Main Line.

**LIFT BRIDGE OVER THE MURRAY RIVER AT 1 MILE 50
CHAINS ON DOWN SIDE OF MURRABIT**

- 1) The length of the Lift Bridge and Approaches is 52 chains including one small timber bridge, and the Lift Bridge which consists of 4 x 24' approach spans, 2 x 90'7" fixed spans and 1 x 60'6" lift span.
- 2) The lift span gives a clearance of 30'8" above highest known flood level and a clear waterway of 55' between piers.
- 3) The 24' approach spans have pile piers and steel superstructure and other spans have reinforced concrete piers and steel superstructure.
- 4) The Bridge is designed to carry a Locomotive weighing 160 tons.
- 5) The Bridge is also designed to carry Road Vehicular traffic.
- 6) Hand Operated Gates are provided as follow:-
Two outer Gates to regulate road traffic; one on each side of the bridge at the Road and Rail approach. These gates are fixed to close either over the roadway or Railway, and their normal position is for Road Traffic. Two inner Gates at each end of the Lift Span on Bridge. These gates are fixed so that they can be closed across the Railway and Roadway when the lift Span is raised. The normal position of these Gates is clear of Roadway, and securely fastened to the side of the Bridge.
- 7) A Telephone Cabin is provided on the Down side of the Bridge on the Poonboon side of the Road approach.
- 8) Up and Down Home Signals are also provided to protect the Railways approaches to the Bridge. The quadrant for the Up Home Signal is placed near the Telephone Cabin, and that for the Down Home Signal near the outer gate on up side of Bridge. The quadrants are secured in the Stop or Danger position by an "A" pattern Annett Lock.
- 9) The Lift span of Bridge is held in the lowered (normal) position by two Plungers; the Plungers are worked by a lever which is secured in the

normal position by an "A" pattern Annett Lock, so that the Annett Key can only be in use for one function at a time, and when in use to release the lever operating the Plungers both Home Signals are held at the Stop position; when in use to release the quadrant working either Home Signal the opposing Home Signal and the lever to release the Plungers on Bridge are held in the normal position.

SPECIAL INSTRUCTIONS FOR WORKING LIFT BRIDGE
OVER MURRAY RIVER ON DOWN SIDE OF MURRABIT

1. The Lift Span of the Bridge must be kept secured in position for Railway and Roadway Traffic, except when it requires to be open for River traffic, or when it requires cleaning or repairing.
2. The normal position of the Up and Down Home signals is STOP.
3. The Annett Key to release the quadrants of the Home Signals or the lever operating the Plungers on the Lift Span of Bridge must, when not required for use at the Bridge, be kept locked in the Safe at the Station-master's office, Murrabit.
4. (a) When the Lift Span requires to be raised for River traffic, the responsible employee (described in clause 9 herof) shall obtain the Annett Key from the Station-master, Murrabit, and proceed to the Bridge.
(b) To permit of the Lift Span being raised the Annett Key must be inserted and turned in the Annett Lock on the side of the span near the operating lever, the lever may then be moved to release the two Plungers, and the movement of the lever will secure the Key in the Lock, and the Lift Span can then be raised or lowered as required.
(c) When the Lift Span is again lowered to its normal position, the lever must be put back to secure the Lift Span in that position, and the Annett Key must then be turned and withdrawn, and when no longer required for use at the Bridge, promptly returned to the Station-master, Murrabit.
(d) The responsible employee working the Bridge must, before moving the lever to secure the Plungers, see that the Bridge is fully lowered, and before withdrawing the Annett Key, must see that the Plungers are in their proper positions to secure the Lift Span.
5. (a) Before the Lift Span of the Bridge is raised the responsible employee must first see that there is no road traffic between the outer Gates and the Bridge, on the Up or Down side, and he must then close and lock the outer and inner Gates on each side of the Bridge. He must also see that the Up and Down Home Signals are in the Stop position.
(b) When the Lift Span is again in its normal position the Outside Gates must be closed and locked across the Line, and the Inner Gates secured in their normal position.
(c) The Lift Span of Bridge must not be raised for River traffic unless there is ample time for such traffic to pass, and the Lift Span to be lowered and secured before any train is due to arrive at the Bridge.
6. (a) The responsible employee must be in attendance at the Bridge prior to any train being due to pass, and must, before leaving Murrabit, obtain possession of the Annett Key. He must see that there is no traffic between the Outer Gates, and must also close and lock the Outer Gates to prevent traffic from entering on the Line, and see that the Inner Gates are clear of the line.
(b) When the train has passed clear of the Road Approaches, the Home Signal must be returned to Stop position, the Annett Key withdrawn, the Outside Gates on each side must then be closed and locked across the line. The Annett Key, when no longer required, must be promptly returned to the Station-master, Murrabit.
(c) The Driver of a train must approach the Bridge with his train well under control, and must not proceed over it until, in addition to the proper Home Signal being at Proceed, he receives an All Right Hand

Signal from the responsible employee at the Bridge.

7. If any wreckage or failure of any part of the Bridge or of the Annett Lock or Plungers occur, the matter must be at once reported to the Chief Engineer of Signals and Telegraphs, Signal and Telegraph Supervisor, and the local Ganger and Signal Adjuster, care being taken to give all particulars as may be necessary, to enable the nature and extent of the accident to be understood. The Superintendent Goods Train Service, District Superintendent District Engineer, and Block and Signal Inspector must be also advised.
8. In the event of a failure of a Home Signal at the Bridge, the Driver of a train before passing such Signal at Stop, in accordance with the Regulations, must be in possession of the Annett Key, and be accompanied on the Engine by the responsible employee whilst passing over the Bridge.
9. The District Superintendent must arrange to appoint an employee to work the Bridge, and for such employee to be certified to as competent by the Block and Signal Inspector before he is permitted to carry out the duties. This employee shall be the "responsible employee" referred to in the preceding clauses. Poonboon will be a Staff Station, and the Section; Murrabit-Poonboon will be worked in accordance with the Rules contained in Appendix 11. of the Book of Rules and Regulations, and the supplementary instructions shown on pages 546 to 561 inclusive of the General Appendix.

The attention of Guards is drawn to Regulation 230, also Sub-clause (B) of clause 6 of Instructions, page 206, of General Appendix, re shunting operations at Sidings, and security of Points and Scotch Blocks at Caretaker and N.C. Stations.

Special Note for Guards and Drivers at Poonboon- the Guard of each Down train will be responsible for working the Fixed Signal and plunger Lock, as required, when the train arrives, and the Driver must not pass through the Points in the trailing direction from any Road unless he has received permission from the Guard to do so; the Guard must replace the Points and Plunger to the proper position and hand the Staff or Staff Ticket to the Driver, and lower the Home Signals to the Proceed position immediately before the train leaves, and lock the quadrant of the Home Signal in the pulled-over position by the carriage lock provided.

When a train has a run on a Staff Ticket between Murrabit and Poonboon the Guard must, on arrival of such train complete at Poonboon, telephone its arrival to Murrabit, in accordance with clause 3 of the Supplementary Instructions of Train Staff and Ticket Working, page 548 of the General Appendix, and make the necessary entries IN Train Register Book.

Amend list on page 549, General Appendix, to read Murrabit-Poonboon instead of Kerang-Murrabit as shown.

On arrival at Poonboon of a train carrying the Staff, the Guard of such train will be held responsible for the Staff Working being carried out in

Line or Portion of Line between-	Maximum rate of speed		
	Engine Funnel First		Engine Tender First
	Passenger trains without any 4 wheel vehicle attached.	Passenger trains with 4 wheeled vehicle attached and Mixed and Goods Trains. Trains.	All Trains
Murrabit-Poonboon (Up or Down)	Miles per hour 30	Miles per hour 30	Miles per hour 20

NOTE:- The maximum rate of speed over the Murray River Bridge at 1 mile 50 chains on Down side of Murrabit, must not exceed 10 miles per hour. Notice Boards lettered "Speed Limit Must Not Exceed 10 Miles Per Hour Over This Bridge" are erected inside the Home Signal at each end of the Bridge. The loads for Mixed and Goods trains will be shown hereunder:-

Section	Load Schedule							Single Headed Trains	Double headed Trains
	145 %	130 %	128 %	113 %	100 %	90 %	Limit		
DOWN:									
Murrabit to Poonboon	1088	-	-	-	750	675	75		Not Allowed
UP:									
Poonboon to Murrabit	1088	-	-	-	750	675	75		Not Allowed

When running tender first, the usual 10% reduction on above loads to be allowed. Mixed train - Goods load, 40 vehicles. Goods with Car attached, 50 vehicles. Insert on page 130, Load Table. Tender first running is permitted in either direction subject to usual conditions re 10% reduction in the loads of trains to run. Add to list on page 309, General Appendix.

OFFICER'S DISTRICTS

Add to the district of the District Superintendent, Bendigo, page 904, General Appendix.

Add to district of District Rolling Stock Superintendent, Bendigo; Depot Foreman, Bendigo, pages 909-910, General Appendix.

Add to district of District Engineer, Bendigo; Roadmaster, Bendigo, Worksmaster, Bendigo; Road Foreman, Bendigo No 2; Works Foreman, Bendigo No 2; Signal Supervisor, Bendigo; Signal Adjuster, Bendigo No 2; Electrical Fitter, Bendigo No 2, pages 913 to 922, General Appendix.

GOODS BUSINESS

Ballbank is open for Goods in truck loads of 3 tons maximum, all other stations on this line are open for general Inwards and Outwards Goods traffic (all Inwards Goods to be pre-paid).

The receiving days at Melbourne Goods Sheds for this line are:-

General - Thursdays. Time: 2pm.

Perishables - Tuesdays and Thursdays. Time: 2pm.

The receiving door of shed is No 50 and no crane power is available.

The facilities provided at all stations is shown as under:-

Name of Station	Class of Shed	Goods Platform	Goods Siding
BALLBANK			One loop siding 18c overall.
NACURRIE	Shelter Shed 17' x 8'6"		Two loop sidings 19c overall and space for one other. One dead end siding about 11c long to Stock Trucking Yards.
WETUPPA	Shelter Shed 17' x 8'6"		Two loop sidings 19 1/2c overall and space for one other. One dead end siding about 10c long to Stock Yards.
COOBOOL	Shelter Shed	25' x 16' with ramp up end.	One loop siding 18c overall and space for two others.
DILPURRA	Shelter Shed	25' x 16' with ramp up end.	Two loop sidings 19 1/2c overall and space for one other. One dead end siding about 12 1/2c long to Stock Trucking Yards.
TUELOGA	Shelter Shed	25' x 16' with ramp up end	One loop siding 18c overall and space for two others.
POONBOON	Van Goods 12' x 10' Goods Shed 30' x 15' on own platform	50' x 16' with ramp up end	Two loop sidings about 24 1/2c overall and space for one other. One dead-end siding about 13c long to Stock Trucking Yards. One dead-end siding about 7c to Ash-pit.

PASSENGER PLATFORMS

At Ballbank, Nacurrie, Wetuppa, Coobool, Dilpurra, Tueloga and Poonboon, Low Level Passenger Platforms, 200' long, with ramp at Up end of each platform is provided.

STATION BUILDINGS AND EMPLOYEES' RESIDENCES

WETUPPA - One barracks for Way and Works employees.

POONBOON - One barracks for Way and Works employees. Two 20' x 12' portable houses, one for Transportation Branch and one for Rolling Stock Branch employee. Temporary station buildings, with verandah at each end over booking window. All stations on this line are NC, under supervision of SM Murrabit, with Guard in charge of Line.

Add to index of Working Timetable. (A 500/28)

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AN APPRECIATION OF THE VISUAL ASPECTS OF A DWINDLING RAILWAY FEATURE

This article was originally published in an English magazine but the message is just as important to Australian railfans.

A familiar feature of operation rapidly disappearing from the British railway scene is the manually-operated signalbox. Apart from those abandoned along miles of closed lines there are hundreds due for removal on the main lines as signalling modernisation schemes are completed. In an area well known to the writer, panel boxes at Port Talbot and Cardiff have put out of action 52 signalboxes of the traditional type. Work now goes on in a great control room - secret, impersonal and detached - where the men at the panel are vouchsafed a minimum of window space for watching the trains.

The need of British Rail to bring equipment up to date is obvious but one cannot help regretting the visual poverty that results from such drastic surgery. The railway photographer is especially hard hit. Barely recovering from shock at the eclipse of steam, he now finds wide open spaces where once a signalbox of character added a note of background interest to his picture. The photograph of some anonymous diesel had more meaning if you could identify the design of the box. Some quirk of roof pitch or window design could tell you whether the train was within the Swindon, Crewe or Derby orbit, or a score of miles from Inverness.

I looked on the signalbox with affection. From earliest days it was part of the pleasure of watching trains by the lineside, for the bell in the box raised expectancy in the small boy's heart and put an end to bored moments between trains with the brisk movement of levers over the frame. Often miles away from civilisation, the man in the box was the railwayman at local level, ready to put one in touch with a rich fund of railway lore. In the mind's eye is an ample man in shirt sleeves and waistcoat, supporting his arms against the sliding casement while exchanging ribaldry with the crew of a waiting shunting engine.

Signalboxes could provide for extreme human need. I remember, when still at school, thawing out by a coal stove in a Western Valleys box near Newport. Midwinter madness had brought me cycling over on a day of biting frost to watch "Coal tanks" of the London, Midland & Scottish Railway heading the Sirhowy Valley trains up to Tredegar. I have met men who baked bread, grew geraniums, made crystal sets and got on the phone to the next box about backyard ferrets and racing pigeons in between trains. Many were in busy signalboxes where day and night, there was not a moment for thoughts of such things. Some occupied outposts in the most bleak and remote parts of Britain - Slochd, Ais Gill, Torpantau and Waun Avon come to mind. Getting to work in such desolate places in winter called for particular kind of heroism.

Thousands of words must have been written about the equipment inside signalboxes but almost nothing has appeared about the outside - the part that everyone sees. The signal cabin is specialised architecture derived from the semaphore tower of the days before the electric telegraph. A later development is the airport control tower. The unique railway purpose they served was the combining of shelter for signaller and levers with a good view of the trains. I know of building within the converging lines at Chesterton Junction, Cambridge, which I suspect to have some early connection with the regulation of trains. Dating from about 1847 it is octagonal in plan, which suggests that the Eastern Counties Railway built it to give a clear view of the approaches to the junction.

The British signalbox had reached the form we know today by the early 1860's, when the Board of Trade was insisting on a "raised stage" for levers with interlocking of points and signals, and recommending that cover for the signaller should include protection on all four sides.

Architecturally it had no pretensions to greatness, being generally built of wood, though the lower storey might be of stone or brick. Designs built before the very early 1930's were very similar to the familiar garden summerhouse or cricket pavilion. Roofs were either hipped or gabled, the gabled ones often being ornamented with decorative barge-boarding and a finial at the apex. Hamilton Ellis found them "not generally photogenic" from the outside. In his opinion beauty was to be discovered in the shining instruments and lovingly cared-for lever frame within.

A personal belief is that signalboxes were rarely subject to the same considerations of style as were stations, for there was little conception of an overall design policy for railways until Frank Pick took visual affairs in hand for the London Passenger Transport Board in 1933. The appearance of a signalbox was the responsibility of the Signal Department and the temporary utilitarian approach would do for a building not actually used by the travelling public. How else can one explain signalbox stovepipes and the inevitable telegraph pole just inches away from the building? There were, of course, boxes that had style and those that had not. To me, a hipped roof gave a signalbox a good start. A good measure in integration between signalboxes and stations was being achieved by the Great Western during 1900-1910 when new buildings in red and blue brick accompanied the opening of such cut offs as the Castle Cary and South Wales direct lines. A similarly successful integration of the two was to be found on the West Highland line of the North British Railway.

STILL IMPRESSIVE VARIETY

In 1966 there was still an impressive variety of designs on the railways of Britain. The London and South Western Railway had at least three kinds - a miserable barn of a box with small windows, a glass conservatory with a louvre ventilator, and a stylish cabin with arched windows which were reminiscent of some Edwardian tramcar. All three can still

be found at Barnstaple, within the space of a mile. The Midland had the most uniformly archaic-looking boxes with spiky finials and a quaint convention of corner pieces to the window casements. By painting the timber frame members a dark khaki and the rest a light stone the B.R. Design Panel has made them look more Tudor than Moreton Old Hall. On the Somerset & Dorset the carpenters ran riot with swelling ogees above the porch.

Romanticism flourished among the Welsh hills and in and around Stoke-on-Trent, for the Taff Vale and North Staffordshire had gabled boxes with fretted boards. A real rarity recently came to my notice on a journey to Somerset - a big Bristol & Exeter box at Yatton West, which somehow escaped rebuilding by the GWR. The majority of signalbox designs, strangely enough, hung on to a style of window that came to fullest flowering in the eighteenth century, with its glazing bars holding many smaller panes. The long glass palaces on the North Eastern, south of York - Bolton Percy, Church Fenton and Shelburn-in-Elm - might each have as many as 200 smaller panes. Boxes on the London, Brighton & South Coast, and the South Eastern Railways really looked Victorian. The Brighton's had a coach-built look, richly rounded. The South Eastern's had the pinched and poor look of a boarded tenement with four-pane sash windows grouped in pairs.

In the decade up to 1939 the four main lines strove to present a modern image and signalboxes began to reflect the current taste for flat-roofed horizontality, though a simple country style happily prevailed on such wayside schemes as Otterington and Beningborough, on the London & North Eastern Railway. The Southern projected its Southern Electric image with a programme of streamlined stations and signalboxes with elliptical ends, but the well-known grey monolith at Waterloo was the first trail-blazer to get into the photographers' sights as the Bulleid Pacifics steamed past the platform end, en-route for the West Country. In 1933 signalling at Cardiff General went all-electric and Cardiff East and

West, long and box-like in brick and concrete, contributed to the GWR "new look". It was not for nothing that the Great Western A.E.C. railcars took on the shape they did, while another manifestation of the craze for speed was the reappearance of MANORBIER CASTLE with a bullet nosed smokebox.

Turning to the present day, there are some excellent examples on all regions, showing a pleasing use of building materials in good clean designs. One design feature on modern power boxes which I find a little disturbing is the enormous exaggeration in the depth of roof on such examples as Norton Bridge on the London Midland Region, where a prominent sun visor is carried out over the windows to reduce glare.

While preparing this article the author learned that the Ministry of Transport has directed that motorway junctions shall be numbered and not named. Thank goodness no such travel boredom existed on railways during the day of the mechanical signalbox, which extended far beyond the station nameboard. Amid the prose you could find touches of poetry. Wern Ddu (when pronounced properly) was one of my favourite Welsh ones. A lushness of illiteration flowed from Silver Sands Siding Signals on the Southern near Redhill. Bracken Hill and Cockley Brake evoked the rural background of the railway while Stormy Down and Hell Beck suggested nature in the raw. You could believe in otters by the Severn & Wye line at Otters Pool, while

Duckoo was the unexpected name on a box near Spalding.

The GWR standardised with neat cast-iron plates invariably ending in the words "Signal Box". Standardisation could be expected of a railway that cheerfully found names ending in "Hall" for 300 engines, but a lack of flexibility in the rules led to tiresomely long examples, like Cheltenham Spa Malvern Road East Signal Box and to the plainly absurd Box Signal Box, Bo Peep, North Pole and Bird-in-Hand could set the imagination working, though a nearby public house might provide the explanation. Butlin's Sidings near Kettering turned out to be concerned not with holiday camps but Northamptonshire iron ore. Research into local history might give the answer to some - who was Doctor Day of Bristol, for instance, and for how long will the Western Region signalling programme allow Dr. Day's Bridge Junction to be his memorial? Not far away, at a passing loop on the Portishead branch, is a box called Portbury Shipyard. Do phantom ships dock in some hollow across the levels between there and the Avon? Nothing is left now save grasses bent by the wind, but the name lives on. Soon all this will be gone, but as time runs out for the mechanical signalbox, one thing is reassuring. On the preserved lines of Britain (and in one or two enthusiasts' gardens) a few cherished examples will continue to do duty for many years to come.

BOOK REVIEW

(continued from page 107)

RAILS THROUGH SWAMP AND SAND

by Malcolm Thompson. 112pp.

Published by Port Dock Station Railway Museum, 1988.

At first glance this soft cover A4 size book looks like a rather comprehensive study of the history of the Adelaide to Port Adelaide Dock line. Upon opening the book we learn that the scale has been increased somewhat to take in the extension of the line to Semaphore and Outer Harbour together with the branch lines to Finsbury Stores, Hendon and Henley Beach.

I enjoyed the book. I found the text to be thorough and the photographic coverage wideranging so much so that the reader was left with a full insight into past operations as well as the present. It was pleasing to see the many photographs that not only showed the trains but also the railway surrounding the train e.g. stations and buildings, yards, signals and signal boxes, all important features of the railway but so often neglected.

There is, however, one criticism that must be made and that is of the diagrams. On page 30, there is a diagram of Adelaide yard which shows no less than four diamond crossings leading to the South Car Yard and a track leading to the North Car Yard but coming from nowhere. Now, although I am a Victorian, I know that Adelaide Yard in 1970 did not look like that. Why, when a good book is produced, is so little attention paid to such an important area. Further omissions from all the diagrams are the locations of the signals and relevant signalling equipment especially in the light of the frequent references to signalling and safeworking in the text. I am sure that the author would have had access to such information. Even I have diagrams drawn from observations in the late 1960s and early 1970s regarding the signalling in the area.

Throughout the text, there are references to dates of additions and alterations which are given as day, month and year not merely just the year. With the detailed and extensive research that has obviously been conducted to get the text right, why on earth are the diagrams so poorly done.

Despite this rather major exclusion (in my opinion and probably many others especially among the signalling enthusiasts) from the book, I think that RAILS THROUGH SWAMP AND SAND should be on most enthusiasts book shelves because of the extensive collection of historical data and photographs. I look forward to a revised edition which, hopefully, will include the missing information. (D.E.L.)

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Stephen Robert McLean 1950-1989.

Members of the Signalling Record Society (Victoria) were deeply shocked to learn of the tragic death of our Secretary and Treasurer on 11 November. Stephen was a doer, into things that he believed in or knew he was capable of achieving. It will be very difficult to fill the gap in the societies ranks. On behalf of all members of the SRSV I extend sincere sympathy to the family on their loss.

I first met Stephen in 1966 at Box Hill High School when I was introduced to this student who had joined the school from Mont Albert Central and was interested in trains. After two years at school the railway enthusiasts has 'discovered' each other and regularly gathered along the back fence of the school ground to watch trains especially the 1.06pm down Lilydale with its unusual consist of two Tait cars and four Doggy cars.

It was not long after this that my father commenced the regular Friday night car transfers from Box Hill South to Box Hill North to attend the ritual known as Wingrove. I discovered also about this time the fledgling Winslow, Hartford and Eganstown Railway and whilst it resided at Box Hill North spent a number of Saturdays operating this junior railway. I was also slowly coming to appreciate railway history through his father and for this I am eternally grateful for the introduction.

With my transfer to Seymour in 1972 I spent a number of Fridays travelling back to Kenmare Street for a night of railways be it Wingrove or Winslow but after Stephen's commencement in the teaching profession I was not sure what was going to happen. With the news that Tallangatta was to have a new teacher the future looked very dim and I wasn't sure whether Cohuna was any better. All the same a number of visits were made to Cohuna whilst the WH&ER was resident there.

I have never been a great letter writer and so I was very pleased to learn that the Seymour High School was going to gain the services of a new teacher. Thus commenced many happy years where the WH&ER (and the East Highlands Railway) had regular operating nights, generally alternate weeks each. Even when the EHR went into limbo in Avenel the WH&ER was run regularly.

It was a sad day when the last session was run in Seymour and the railway was packed off to Gippsland. However, I was still able to enjoy an occasional session.

The model railway was not the only thing to be thankful for. Many years of train travel were virtually commenced with a two day tour by two junior enthusiasts to Kingston in South Australia (my first trips on the SAR). Travel was via No 25 Dimboola passenger, thence No 139 Express Goods in a JCP to Serviceton and The Overland to Wolsley. Here we found the Blue Lake waiting in the opposite platform and after an uneventful journey alighted at Naracoorte to find a Bluebird railcar "Kestrel" waiting to form the branch connection to Kingston. After a pleasant run out and back "Kestrel" was coupled to the two cars from Mount Gambier and the run to Wolsley was commenced. We discovered that these cars could run very fast indeed. At Wolsley we were given a lift to Serviceton via a local truck that was heading in that direction in order to catch the railcar to Dimboola and the famous No 34 Pass to Melbourne.

Quite a few other tours were undertaken with Stephen, a memorable two weeks on the Tasmanian Government Railways was one of them. Other tours were to SA again via Stockinbingal, Narromine and Dubbo, and completing our NSW leg in

"Alberga" where we attempted to try out the 240v adaptor to shave, however, not very successful I think about 150v was all that came out. There were also numerous car trips to railway locations ranging from one day trips in Victoria to at least four days in the Murray Lands of SAR where Stephen, Andrew and myself managed to travel on various unusual portions of the lines covered by the mixed trains. Again an area that I might not have visited if it wasn't for Stephen enthusing over these trains.

It was a pity that I was unable to accompany him on any overseas tours but these were beyond the range of my pocket, a young family came first, however, we did spend many hours compiling itineraries of places to visit if ever such a trip became possible.

Unfortunately due to some tragic circumstances our friendship and association has been cut short and I will have to rely on memories but what memories. I suppose the real tragedy is the fact that I never had a chance to say goodbye.

Goodbye Stephen.

David Langley.
November 1989.

(Footnote: Following some discussions on the weekend of 25/26 November, I can foreshadow some sort of annual remembrance of Stephen - most likely a showing of slides from his extensive slide collection which is currently being indexed by Roderick Smith. Also the compiling of the crossword is to be undertaken by Andrew McLean ensuring all you crossword freaks a continuing challenge. DEL.)

THE SIGNALLING RECORD SOCIETY (VICTORIA)
WISHES ALL ITS MEMBERS AND THEIR FAMILIES
A CHRISTMAS FULL OF JOY AND HAPPINESS
AND A NEW YEAR FULL OF GOOD FORTUNE.

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SUPPLEMENT TO THE NOVEMBER MAILOUT.

I wish to thank all members who have put up with the disgraceful continuity of *SOMERSAULT*. It has been a difficult year with many outside influences working against us. I hope that all has past and that 1990 will see a return to the regular mailout of *SOMERSAULT* and the U.K. magazine. Production of both, even despite the enormous saving of time by having John Sinnatt's excellent series on Level Crossing Protection already typed up and due to run all year, has been difficult to say the least. The printer was on shaky ground for a while and it looked as though we may have had to resort to some other means but that time has been put into the future again, thank goodness.

With the year over it is time to thank all the contributors to *SOMERSAULT* and I hope that next year we can keep the regular flow of interesting articles coming. BUT it all depends on you. Please feel free to submit articles or snippets of information, or even ring me to discuss possible future articles. If you are contemplating writing a historical article on a station or line it would be worthwhile to air your intentions to me or at a meeting to see if anyone else is contemplating something similar. I know that Andrew Waugh is working on the North-East main line covered by the recent SRS Show Day tour and has already submitted an article on Longwarry which will appear early next year. I am slowly working on my Western line series having already completed Ararat to Murtoa, the next two sections

should be Murtoa to Dimboola and Dimboola to Serviceton. If any one has any comments or corrections regarding any historical article already published please let me know so that any necessary corrections or additions can be published. Who knows, these articles may lead to booklet type publications.

This mail out contains the July and September issues of *Somersault*, and also some reprint pages to be inserted into the July issue at the appropriate places. U.K. members will also receive a number of copies of the *THE SIGNAL RECORD*. Further copies of that magazine should be available shortly - No 17 has been received in Australia. The November issue of *SOMERSAULT* will be printed shortly and will be distributed as soon as available along with the renewal notices for 1990.

Unfortunately the gremlins got into the act with the September issue and reprint pages to fix the omissions will be issued in due course. In John Sinnatt's article the circles denoting light signals have been omitted, the signals concerned are depicted by a very short arm away from the post.

Finally, the next meeting will be held on Friday, 15 December 1989 at the usual venue - the library room of the A.R.H.S. on the upper floor of the up side station buildings at Windsor commencing at 2000 hours. It is hoped that a syllabus item can be arranged so come along for a pleasant evening.

DAVID LANGLEY,
EDITOR - *SOMERSAULT*.

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