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SIGNALLING RECORD SOCIETY VICTORIA INC

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Deadline for November 1992 issue is 26 October 1992.
*NEXT MEETING:* Friday, 18 September 1992.
*VENUE:* Uniting Church Hall, Hotham Street, Mont Albert, commencing at 2000 hours.

## MINUTES OF THE JULY 1992 MEETING

Present :- J.McLean, A. Jungwirth, D.Langley, B.McCurry, W.Johnston, W.Brook, J.Churchward, K.Lambert, A.Gostling, R.Smith, A.Waugh & G.Cumming

The President, Mr. Alan Jungwirth, took the chair and opened the meeting @ 2000

The first part of the meeting was taken up viewing an episode of the television series "Track Record" shown on A.B.C. T.V.

The President welcomed member Bill Johnston to the meeting

Minutes of the March Meeting :- Accepted as published. Langley/Waugh

Matters Arising :- Nil.

Correspondence :- Andrew Waugh has received some information from the U.S.A. concerning two large mechanical interlockings. State Line Tower in Hammond, Indiana, is equipped with a 224 lever frame and is believed to still be manned. The tower is in Indiana while most of the signalling equipment is in Illinois. It is probably the largest mechanical frame in existence. State Line Tower received a mention in a recent issue of the S.R.S.U.K. "Signalling Record". Dolton Tower in Dolton, Illinois, (about 5 miles from State Line Tower) is known to still exist with a frame of more than 200 levers.

By way of comparison, in the U.K., York Locomotive Yard Box had a 295 lever frame and London Bridge Box had a 400 lever frame.

Here in Victoria, the largest frame was Flinders Street "A" with a 280 lever frame of which 246 levers were working. Spencer Street No.1 Box survives with a 192 lever frame of which approximately 120 levers are still working.

Andrew Waugh has received a copy of the book on the Westinghouse Style L power frames written by John Francis. The cost of the book is £6.00 and postage is £11.91 airmail, £5.28 printed paper, or £1.78 surface mail.

A letter has been received from the State Library of Victoria concerning gaps in their collection of "Somersault". The letter was refered to the Managing Editor for attention.

A page of research notes has been received from Des Jowett.

Langley/J.McLean

General Business :- Andrew Waugh moved the following motion:- That the S.R.S.V. thank David Langley for his efforts in editing "Somersault" for the past 15 years. Seconded by Roderick Smith. Carried.

Roderick Smith sought clarification regarding the size of Ballarat "A" Box and Benalla "B" Box. Each signalbox is equipped with a 118 lever interlocking frame.

Andrew Waugh made a plea for articles and items for publication in "Somersault". Please send any contributions to Andrew at the address shown on the front cover of "Somersault".

Keith Lambert tabled copies of the latest signalling diagram for Clifton Hill and passed around slides of the new signal control panel at Ballarat. The new diagram for the Clifton Hill line still shows the goods yard at Victoria Park. These sidings were pulled up some time ago.

Alan Jungwirth gave details on the passage of the Down "Overland" on the Friday night of the occupation at Ballarat. The train was scheduled to run via North Geelong loop and Cressy to Ararat, however South Kensington signal box sent the train on to the Sunshine line as per usual. The train was stopped at West Footscray and shunted on to the goods lines. The "Overland" then ran via Tottenham Yard and Brooklyn Loop to Newport "A" Box and then to North Geelong Loop. The delay was in the vicinity of 30 minutes.

Jack McLean gave details about the delays incurred by Up trains between Maroona and Gheringhap on the Monday morning of the weekend occupation at Ballarat. A defective vehicle had to be detached from one of the freight trains at one of the sidings which in turn delayed trains that were following, including the Up "Overland". An attempt was made for the Up "Overland" to overtake the delayed freight train, but this was not successful due to a misunderstanding between the train crews and the train controller.

Syllabus Item :- The President introduced Jack McLean who, in his own kitchen, spoke to members on railway timetables and collecting timetables. Jack's talk was illustrated by many examples of different timetables from all over the world.

Meeting closed :- @2212

Next meeting Friday September 18, 1992, at the Uniting Church, Hotham St. Mont Albert, commencing @2000

# SIGNALLING ALTERATIONS

*The following alterations were published in WN 24/92 to WN 31/92. The alterations have been edited to conserve space. Dates in parenthesis are the dates of the Weekly Notice.*

27.06.1992 **Macaulay**

On Saturday 27/6/92, Dwarf Signals 402 on Post 'C' and 403 on Post 'B' were removed from service (O.2910/92, WN 25/92)

(30.06.1992) **Dunolly - Cope Cope**

Signalling diagram 12/91 replaced 36/88. Diagram is "as in service." (O.2888/92, WN 24/92)

(30.06.1992) **Benalla**

Signalling diagram 4/92 replaced 22/88. Diagram is "as in service." (O.2887/92, WN 24/92)

(30.06.1992) **Ballarat**

Stage 1 of the Yard and Signalling rationalisation was commissioned. The following alterations were performed:

1. Ballarat East and Ballarat "A" Signal Boxes were abolished.
2. The new Signalling System, featuring three position Light Signals and Dual Control Point Machines, will be controlled from a Control Panel provided in the Station building located on the Down Platform at Ballarat. The Up Starting Signal, Post No 54, is a two position (light) signal.
3. The Main Line Crossover No 20, located on the Down side of Signal Post No 3, has been renumbered No 53.
4. The Main Line Crossover No 68, located on the Down side of Signal Post No 8, has been renumbered No 39.
5. The Main Line Crossover No 54, between No 1A and 3 tracks, has been renumbered No 23.
6. The Main Line Crossovers Nos 52 and 62, between No 1A and "U" tracks, have been abolished.
7. The Main Line Crossovers Nos 16 and 24, between No 1 and 3 tracks, have been abolished.
8. Crossover Points Nos 21 and 25, between No 1 track and the Loco Track, have been relocated 175 metres in an Up direction and renumbered No 25.
9. Points No 52, between No 3 and 4 tracks, have been renumbered No 37.
10. The Points and Catch No 26, between No 1 track (Ballarat East) and W, X, and Y Goods tracks have been renumbered No 45.
11. A new Crossover, No 35, has been provided at the Up end of No 3 track leading to the Goods Yard (No 5 track).

The following Signal Posts have been removed from service: (Ballarat East) 1, 2, 3, 4, 5, 5A, (Ballarat) 8, 8B, 9B, 11, 13, 14, 15, 17, 20, and 21B.

The following Signal Posts have been removed from service and the signals thereon have been fitted with black wooden crosses (as per Regulation 91): (Ballarat East): 6, 6A, and 7; (Ballarat):9, 10, 12, 16, 18, 19, 21, and 23.

The following Fixed Signals have been brought into service: Down Repeating Signal, Post A1147; Down Home Signals, Post Nos 40 and 50; Down Dwarf Signals, Post Nos 32, 34, 38 and 52; Up Home Signals, Post Nos 24, 26, 28, and 46; Up Dwarf Signals, Post Nos 30, 36, and 44; and Up Starting Signal Post No 54.

No 3 Track has been re-numbered No 2 track and No 4 track re-numbered No 3 track.

In conjunction with the abolition of Ballarat East and Ballarat "A" Boxes, the Track Block System has been abolished and the Block Instrument from Ballarat East has been relocated into the Ballarat Signal Control Room.

A closed circuit camera has been mounted on Signal Post No 50 to enable the Signalman at Ballarat to observe Down trains arriving in Ballarat. The "Train Arrive" Bell Code Signal may be sent to Warrenheip provided the Signalman, Ballarat, has observed the Down train complete inside Signal Post No 50 on the Television Monitor provided in the Signal Control Room.

Push buttons have been provided in Ballarat "B" Box to release levers No 3, 4, and 13 from the normal position.

The interlocked Gates at Humffray Street have been abolished and replaced with Automatic Boom Barriers.

Amend Working Timetable General Instructions, page 27 (Safeworking Systems), page 28, and page 29; Book of Signals, pages 149 to 154; General Appendix, page 256. (O.2858/92, WN 24/92)

05.07.1992 **Lilydale**

On Sunday, 5 July, Train Stabling Security Gates and associated signalling was brought into service. The principle alterations are:

- The Down end of No 3 track has been baulked and renamed Siding 'E'
- Siding 'D' has been connected to the former Coldstream line.

- The Annett Locked crossover from No 2 to No 3 track (now renamed Siding 'E') will be motor operated and worked from No 210 lever in the Signal box.
- Dwarf signal No 316 has been provided to control movements from No 3 track to Siding 'E'.
- Dwarf Signal No 317 has been provided to control movements from Siding 'E' to No 2 or No 3 tracks.
- The B pattern Annett lock has been relocated from No 206 crossover to Nos 3 and 4 security gates at the Up end of Siding 'D'.

Security Gates are provided and are numbered as follows:

- Train Security Gates Nos 1 and 2 to Sidings 'A', 'B', and 'C'.
- Train Security Gates Nos 3 and 4 to Sidings 'D'.
- Train Security Gates Nos 5 and 6 to Siding 'E'.
- Road Security Gates Nos 7 and 8 and Nos 9 and 10.
- Train Security Gates Nos 11 and 12 at Down end of Siding 'D' to former Coldstream line.

Open and closed indications will be provided for the train security gates in the Signalbox. Before placing a fixed Signal at proceed for a train movement to or from a Siding or track with security gates, the Signalman must ensure the proper security gates are open. Only closed indications will be provided for the road gates in the Signalbox.

Amend Signalling Diagram No 57/85 accordingly. (O.2926/92, WN 25/92)

(07.07.1992) **Glenrowan to Wodonga Loop (Standard Gauge)**

Diagram 30/91 issued. Diagram 10/87 cancelled. Diagram is "as in service." (O.2889/92, WN 25/92)

(07.07.1992) **Donald - Woomelang**

Diagram 16/91 issued. Diagram 10/83 cancelled. Diagram is "as in service." (O.2898/92, WN 25/92)

(14.07.1992) **Craigieburn, Donnybrook & Wallan**

Diagram 28/91 issued. Diagram 32/89 cancelled. Diagram is "as in service." (O.2938/92, WN 26/92)

(14.07.1992) **Inverleigh to Maroona**

Diagram 2/92 issued. Diagram 12/90 cancelled. Diagram is "as in service." (O.2939/92, WN 26/92)

30.06.1992 **Leongatha - Welshpool - Barry Beach Line**

The Leongatha - Welshpool line was booked out of service for all rail traffic from 30 June 1992. A baulk has been placed across the line 700 metres beyond the Down end of the passenger platform at approximately 127.5 km. No train or locomotive may operate beyond the baulk without authority from the Superintendent of Safeworking and the Group Manager, Track. Insert a note on Page 96, Master Train Plan. (O.2950/92, WN 26/92)

(21.07.1992) **Beyond Somerton Loop to Seymour Loop**

Diagram 26/91 issued. Diagram 20/86 cancelled. Diagram is "as in service." (O.2977/92, WN 27/92)

13.07.1992 **South Kensington**

From Monday, 13.7.92, the Signalling arrangements shown on Signalling Diagram No 5/92 were commissioned and Signalling Diagram No 7/91 was cancelled.

The principal alteration was that the miniature lever power frame controlling the South Kensington interlocking and the current track circuit diagram were abolished. A new unilever signal control pancl and track circuit diagram were provided in South Kensington Signalbox. The control panel is provided with a switchout facility for Maribrynong River Junction operated by No 660 closing lever.

A 5P Key switch is provided to allow the panel to switch out and transfer control of the South Kensington interlocking to Metrol. Yellow switched in and switched out indications are provided. This key switch is not yet in operation.

The existing Points and Signals remain in their current position but have been renumbered as indicated in the conversion charts below. The exception is Automatic Signal No W180 which will be relocated 70 metres in the Down direction and renumbered SKN 764.

South Kensington - Point Conversion Table

| Existing Number | New Number | Existing Number | New Number | Existing Number | New Number |
|---|---|---|---|---|---|
| 29U | 658 | 48U | 678U | 19 | 666 |
| 29D | 668 | 48D | 678D | 18 | 656 |
| 30U | 657 | 51 | 693 | 5 | 661 |
| 30D | 669 | 50 | 667 | 3U | 662U |
| 28U | 672U | 41U | 671U | 3D | 662D |
| 28D | 672D | 41D | 671D | 4 | 670 |
| 27U | 674U | 11 | 665 | | |
| 27D | 674D | 10 | 655 | | |

Key: U - Up; D - Down

South Kensington - Signal Conversion Table

| Existing Number | Type | New Number | Type | Existing Number | Type | New Number | Type |
|---|---|---|---|---|---|---|---|
| W 143 | (A) | SKN 769 | (A) | W 161 | (A) | SKN 667 | (A) |
| M 143 | (A) | SKN 759 | (CA) | 45 | (D) | SKN 776 | (D) |
| SKN 668 | (A) | SKN 668 | (A) | 12 | (H) | SKN 765 | (H) |
| SKN 658 | (A) | SKN 658 | (A) | 24 | (H) | SKN 755 | (H) |
| 65 | (H) | SKN 764 | (H) | 14 | (H) | SKN 766 | (H) |
| 67 | (H) | SKN 757 | (H) | 20 | (H) | SKN 756 | (H) |
| 31 | (D) | SKN 753 | (D) | W 179 | (CA) | SKN 763 | (CA) |
| 63 | (H) | SKN 793 | (H) | W 180 | (CA) | SKN 764 | (CA) Rel |
| 16 | (D) | SKN 772 | (D) | M 187 | (A) | SKN 655 | (A) |
| 15 | (H) | SKN 768 | (H) | 6 | (H) | SKN 761 | (H) |
| 21 | (H) | SKN 758 | (H) | 2 | (H) | SKN 762 | (H) |
| 60 | (H) | SKN 791 | (H) | U2 | (H) | SKN 770 | (H) |
| U60 | (H) | SKN 771 | (H) | W 208 | (A) | SKN 760 | (CA) |
| 35 | (H) | SKN 774 | (H) | W 209 | (A) | SKN 661 | (A) |

Key: (A) Automatic, (CA) Controlled Automatic, (D) Dwarf, (H) Home

New Post Telephones will be provided at all controlled signals, and Drivers must identify the signal they are calling from. A single hand set containing six individual lines is provided for the Signalman. Each line is capable of storing up to four post phone numbers as described in the following table, the Signalman being able to call each group of Post phones by operating the appropriate memory button.

South Kensington
Post Telephone Lines

| Line | Signal Post Nos. |
|---|---|
| 1 | 760T - 762T - 764T - 770T |
| 2 | 761T - 763T - 765T - 767T |
| 3 | 756T - 758T - 766T - 768T |
| 4 | 759T - 769T - 791T - 793T |
| 5 | 772T - 774T - 776T |
| 6 | 753T - 755T - 757T |

(O.2971/92, WN 27/92)

(28.07.92) **Seymour**

Diagram 6/92 issued. Diagram 18/89 cancelled. Diagram reissued "as in service."

(O.3004/92, WN 28/92)

31.07.1992 **Ballarat**

The final stage of the Ballarat Yard and Signalling rationalisation project will take place from 0800 hours on Friday 24 July 1992 to 1700 hours on Friday 31 July 1992.

Signalling Diagrams showing the altered arrangements are not yet available, but the principle alterations will be:-

1. The North Ballarat 'C' Signalbox and the Linton Junction 'D' Signalbox will be abolished.
2. The Double Line from Lydiard Street to Linton Junction will become a Single Line. The current Up Line will be a Single Running Line and the Down Line will become a Siding Line serving the Doveton Street Sidings, Whites Sidings, Redan Sidings, and the Ballast Siding.
3. Three position light signals and motor operated points will be provided at the Down end of Ballarat. All motor points and controlled signals will be operated from the Signal Control Panel located in the Ballarat Station buildings. The motor points are equipped with dual control point machines.
4. Ballarat 'B' Box will be retained and will operate the interlocked gates at Lydiard Street through the existing gate wheel No 35 and gate stop lever, No 34. Any signalled moved through Lydiard Street requires the gates closed to road traffic and the gate stop lever normal before the signal can be cleared from the Signal Control Panel. 'B' Box will NOT operate any points or signals.
5. The large Electric Staff instrument located in North Ballarat 'C' Box will be re-located to the Signal Control Panel room.
6. The miniature Electric Staff instrument located in Linton Junction (Ballarat 'D' Box) will be re-located to the Signal Control Panel room.
7. A closed circuit television camera will be provided at the Workshops Junction focused in an Up direction to monitor the arrival of Up trains.

8. Two closed circuit television cameras will be mounted under the station canopy, one focused in an Up direction, the other focused in a Down direction to monitor train movements. All the closed circuit television screens will be located in the Signal Control Room.
9. A Staff Exchange Platform will be provided between Nos 1 and 2 tracks at Ballarat.
10. The following new Signals will be provided:

| Post No | Application |
|---|---|
| AM1220 | Up Repeating Signal Maryborough Line (may display a reduce to medium speed indication) |
| A1224 | Up Repeating Signal Ararat Line |
| 2 | Up Home Ararat Line |
| 4 | Up Home Maryborough Line |
| 6 | Down Home Main Line to Ararat or Maryborough lines |
| 8 | Up Home Main Line to Nos 1, 2, or 3 tracks |
| 10 | Up Dwarf on Sidings line |
| 12 | Down Dwarf along Sidings line |
| 14 | Up Dwarf from Sidings line |
| 16 | Down Home from No 3 track |
| 18 | Down Home from No 2 track |
| 20 | Down Home from No 1 track |

11. An Annett Key secured in a Crosslock released by No 1 lever is provided at the points leading from the Maryborough Line to the Workshops Sidings.
12. A direct telephone line to the Signal Control room will be provided from the telephone at the "Limit of Shunt" board on the Redan Line.
13. Healthy State indication lights and yellow whistle boards will be commissioned at each of the following level crossings: Humffray Street (118.109km); Doveton Street (119.336km); Macarthur Street (119.867km); Creswick Road (120.438km); Burnbank Street (121.190km); Forrest Street (122.303km); and Gillies Street (123.113km).
14. Level Crossing Predictors and indicator boards will be provided on the Sidings Line at Macarthur Street, Creswick Road, Burnbank Street, Forrest Street and Gillies Street.
15. Telephones will be provided at the following level crossings: Doveton Street, Macarthur Street, Creswick Road, Burnbank Street, Forrest Street and Gillies Street.
16. Operation of the Gillies Street and Macarthur Street Boom Barriers will become automatic for all trains, and the pedestrian wicket gates at Macarthur Street will be removed and replaced with a crib crossing.
17. The two position signals listed below will remain, but will be crossed in accordance with Regulation 91. The Signals are part of the declared Historic Precinct. Post Nos: 6, 6A,7, 9, 10, 12, 16, 18, 19, 21, 23, 26, 27, 28, 29, 30, 31, and 33.

Delete Linton Junction from list of locations with Miniature Staff Automatic Exchanging Apparatus on page 27 of MTP General Instructions. Amend safeworking sections on Pages 27 and 41 of MTP General Instructions. Delete Ballarat 'B' Box, Ballarat 'C' Box, White's Siding, and Ballarat 'D' Box from Book of Signals. Delete instructions for Ballarat North and Linton Junction from page 256 of General Appendix.

(O.3003/92, WN 28/92)

29.07.1992 **Moorabbin**

On Wednesday 29.07.92, 65 km/h speed indication lights were provided on Signals F584, 708, 710, and 711. This work was originally scheduled for Thursday 23.07.92 as shown on Circular O.3000/92

(O.3025/92, WN 29/92)

(04.08.1992) **Jewell**

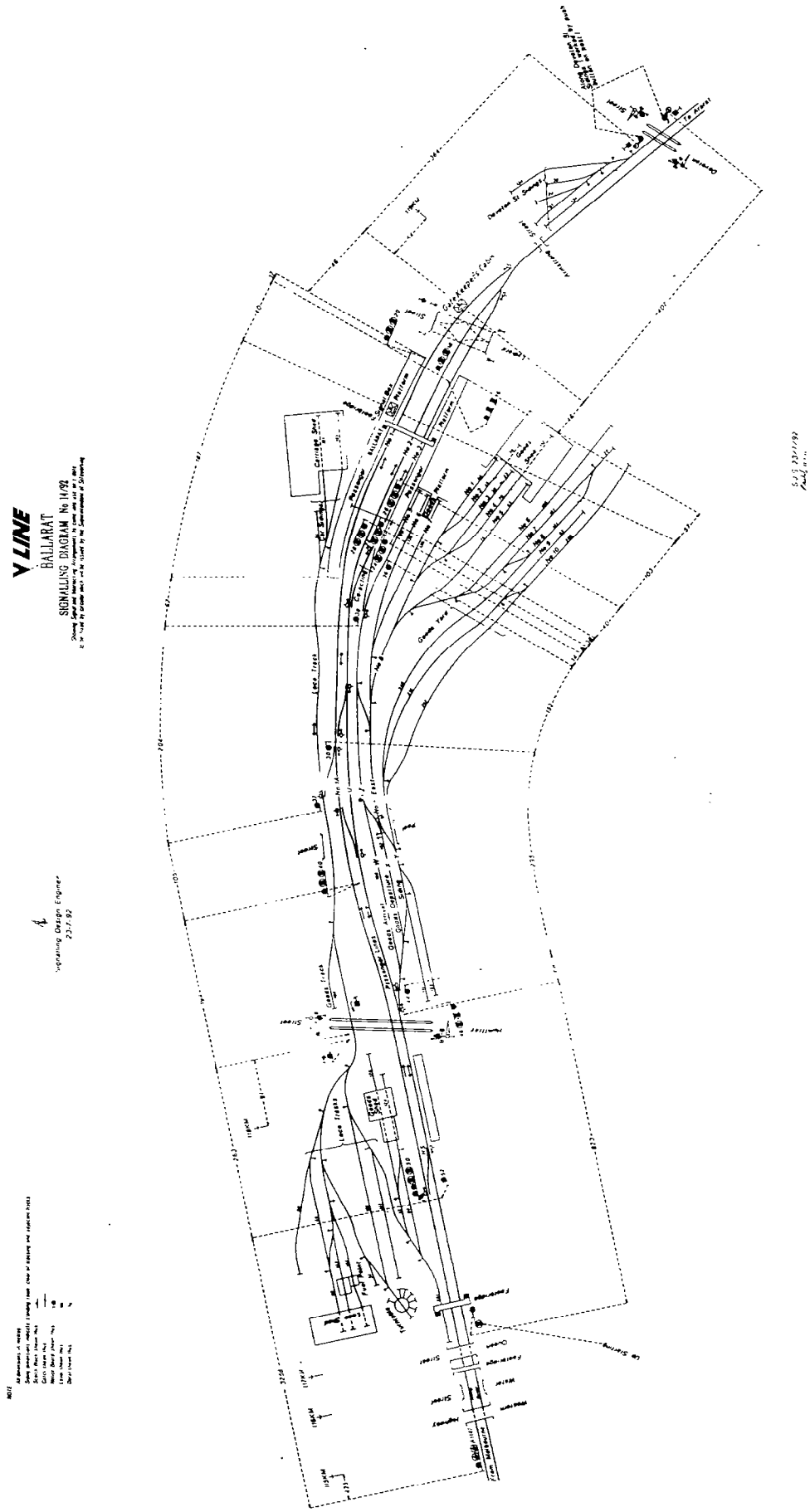
Advice has been received that Nos 25 & 26 Points, leading from Siding 'A' to the Down line at Jewell, have been booked out of service. Levers 25 and 26 have been sleeved normal. (O.3024/92, WN 29/92)

06.08.1992 **Warrnambool**

On Thursday 6.8.92, the following alterations took effect:

1. The plunger lock on the crossover between Nos 1 and 2 tracks was replaced by a "B" pattern Annett lock.
2. A new connection between Nos 1 and 2 tracks was provided at the Up end of the yard. The turnout, known as Points "B", was rodded to a Hayes derail and crowder.
3. Down Home Signal "A", Post 3, was relocated 140 metres in an Up direction to a new position 140 metres on the Up side of Points "B". The Signal can be operated from the quadrant on the platform or from Points "B". Operation from Points "B" requires the quadrant lever released by the Annett key.
4. The "Train Order Working Boards" were relocated to a position adjacent to Signal "A" and the location board was relocated 1000 metres on the Up side of Signal "A". (O.3077/92, WN 30/92)

(Continued on Page 92)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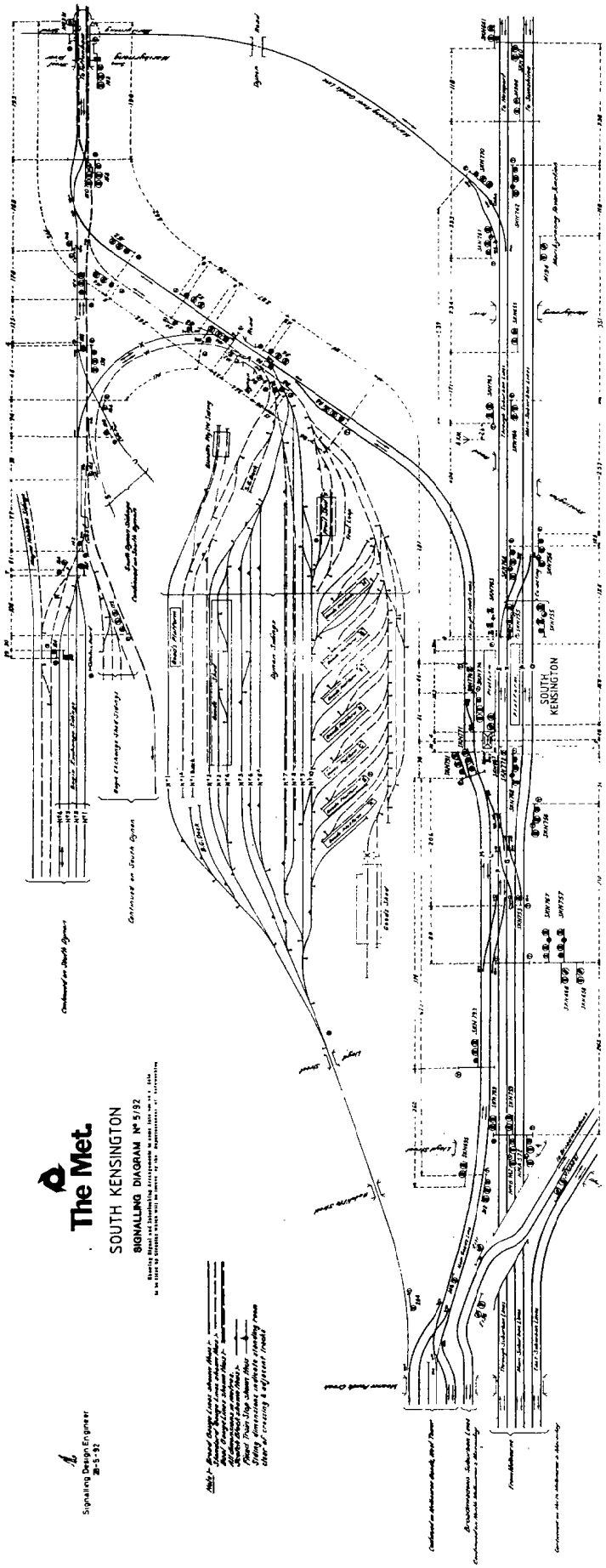
BALLARAT
SIGNALLING DIAGRAM No 14/92
Signalling Design Engineer
23/7/92


The Met.
SOUTH KENSINGTON
SIGNALLING DIAGRAM N° 5/92
SOUTH KENSINGTON
Signalling Design Engineer
28-5-92

# THE NOT SO SAFEWORKING OF THE GEELONG AND MELBOURNE RAILWAY COMPANY

Wilfrid Brook

The July 1992 edition of Somersault (Vol. 15, No. 4) contained a paper entitled "Our Early System of Single-Line Working" by H.W. Cauty, which had originally been printed between 1886 and 1891. This described methods of single-line working before the staff system of that time. Of the Geelong line he stated: "How the Geelong and Melbourne Company managed I cannot say." [1] This is not surprising, as very little seems to have been recorded.

The Geelong and Melbourne Railway Company was incorporated in February 1853, and the first turf was turned on 20 September 1853. However, the six main contracts for building the line were not let until 1854 and 1855. The line opened on 25 June 1857, the first country railway in Australia. But it was not the success that had been hoped, and was seriously criticised on the grounds of safety. Four months after trains had been running, in October 1857, one parliamentarian said that "It was notorious all through Melbourne that no person was safe in going on this line."

In November 1856 the engineers Messrs Mungo Park Smith and Thomas Oldham investigated the state of the works on the railway and submitted a comprehensive and detailed report condemning its engineering standards. This included the path of the railway, the permanent way, embankments, cuttings, culverts, bridges, fencing, crossings and signals. All were found wanting, and it was estimated that £130,000 would be needed to bring the line up to standard and make it safe. [2]

Part of the report stated:

*What kinds of signals are to be used at the stations and passing places? The signals to be used at the stations are known as the 'crossbar' and 'disk', showing by the latter that the train may proceed - by the former, that there is an impediment on the line; but only one signal has been erected, and that is at one of the crossings close to Geelong. It is attached to the heel-post of the gate, and of course tuns with it. To be of any use to the engine-driver, a signal should be visible at least 800 yards off (which the one mentioned is not). The signals at the points and crossings are scarcely worthy of notice as such, rising only a few feet from the level of the rails. They are arrow-shaped, and turn by the same leverage as moves the switches.*

*With reference to the points and crossings in the stations, no complete sets, such as are ordinarily used for railway purposes, are in existence; the crossings consist entirely of pieces of planking 5 feet 3 inches by 16 inches, covered with a wrought iron plate, in which the tongue of the crossing 3 1/2 feet long, is laid and bolted to them both.*

*No check-rails with double chairs have been laid down, but simply pieces of wood covered on the edge next the rail with a piece of angle iron, bolted to the timber fastened to the sleeper by three iron bolts.*

*The trains are passed from one line of rails to the other by a slide rail moved by a hand switch; but this never works with any degree of accuracy for any length of time, and the ends of the rails becoming impaired from the trains passing over them, and by the projection of 1/4 inch of the rail beyond the true parallel, when the inside of the flange of the tire of the engine-wheel becomes slightly worn from its round face, an accident of a fearful nature is by no means improbable.*

*We can instance those which have occurred on the Eastern Counties Railway from this very cause.*

*The inspectors of railways in England would on no account allow a line to be opened with such points and crossings. An outlay of £1,500 over the present cost would have remedied these defects [3]*

As if this report was not bad enough, government commissioners seriously criticised the condition of the railway in 1858. In their report they stated: "There is no system of signals on the line, and we need scarcely say a complete system of signals is essential to the safe working of a railway."[4]

Perhaps it is significant that early in 1858 Edward Snell, who on 9 September 1852 was appointed Engineer to the Geelong and Melbourne Railway Company, preferred to travel by ship to Geelong rather than take the train.

On 3 September 1860 the Government took over the railway at a cost of £800,000, and it was estimated that a further £250,000 would be needed for repairs. [2]

So it is not surprising that H.W. Cauty in describing "Our Early System of Single Line Working" says of the Geelong line that "when the Government purchased the line the first step was with a view to secure perfect immunity from collisions" - the rest of the story can be read in his paper.

**References.**

[1] Cauty, H.W. *Our Early System of Single Line Working.* Reprinted in Somersault, Vol 15, No 4 (July 1992), p64.

[2] Griffiths, T. and Platt, P. *The Life and Adventures of Edward Snell.* Angus and Robertson. 1988, pp XVII - XXIV.

[3] *Report of Mungo Park Smith and Thomas Oldham on the present state of work on the Melbourne-Geelong Railway, 29 November 1856.* Votes and Proceedings, Victorian Legislative Assembly, 1856-57, Vol. 4, No 33, Appendix LII.

[4] Pasley, C., Darbyshire, C. and Higinbotham, T. *Report of the Commissioners Appointed by Government to examine the construction and state of works on the Geelong Railway. 15 March 1858.* Votes and Proceedings, Victorian Legislative Assembly, 1858-59, Vol. 2, No 31, pp 17-18.

# V.R. BLOCK REGULATIONS, 1883

*Block working using Winter's instruments was "introduced and enforced" in Victoria on 15 October 1883. The following "Instructions for carrying out the Block System with Winter's Instruments" were published in the Government Gazette of 30 November 1883; having been signed into effect on 15 November. The basic form of the block regulations described here, although considerably augmented in later years, remained in use until 1 February 1908. On that date the 1907 Rulebook became effective. The Block Rules in force today are a development of those in the 1907 Rulebook.*

### Description of Instrument

The block instrument consists of two dials, a plunger, a switch handle, and a bell or gong.

On the left-hand dial is a red needle referring to trains coming towards the station. It has two positions, pointing respectively to "cleared" and "on line."

On the right-hand dial is a black needle referring to trains going from the station. It has two positions, pointing respectively to "cleared" and "on line."

The plunger is used for giving signals to the distant station. Each time the plunger is pressed, the bell or gong at the distant station will give one beat.

The switch handle has two positions, marked respectively "off" and "on." The ordinary position of the switch handle is at "off." It is placed at "on" immediately before giving the signal meaning "line is clear," and it must remain in that position till the train arrives. On the arrival of the train, and immediately before giving the arrival signal, the switch handle must be placed at "off."

All signals between two stations are given by the plunger, and are received by the bell or gong.

The needles serve to record the signals that have last passed, and thus indicate the state of the line as to trains running over it. In order to move either of them from one position to another, the co-operation of the signallers at both ends of the section is always required.

The signals must be given with great care and steadiness. The plungers must be pressed in gently but firmly, with a slight pause between each pressure, to prevent confusion by the blending of one beat with another. A still longer pause is required between the different parts of each signal. The first beats of the acknowledgment signals should be slightly prolonged.

### Obtaining Line Clear

Call the next station in the direction in which the train is going, and when answered give the signal 2 ("Is line clear?"), and enter the time of this signal in the Train Register Book, in column headed "applied for line clear" on the proper page (trains to _____ station). If the line is clear, the distant station will give the signal 3 ("line is clear"); but if the line is not clear he will give the signal 1.3.1, which must be acknowledged by repeating it. When the line is clear, the distant station will call you, and on obtaining attention will give the signal 3. Having received the signal you must acknowledge it by giving the signal 1.1.1 ("line is clear" acknowledgement). On giving the first stroke of this acknowledgement, your black "train going to _____" needle will point to "on line," and will remain in that position until the train has arrived at the other end of the section, and the arrival signals have been exchanged.

On giving the acknowledgement and seeing that your black "train going" needle points to "on linc," you must enter the time of the signal in the Train Register Book, in the column headed "line clear obtained" on the proper page.

As soon as the train starts or passes your signal-box, you will give the departure signal 4, which will be acknowledged, and you will then enter the time in the proper column of the Train Register Book.

### Receiving Signal "Arrival of Train."

The arrival of the train at the next station will be signalled back to you in the following way:-

The next station will call you, and on being answered will give 2.3.3 (arrival signal). You will acknowledge it, and on giving the first beat of your acknowledgment your black "train going" needle will turn to "clear." Having given the acknowledgment signal, you will enter the time of this signal in the Train Register Book, in the column headed "line cleared" on the proper page.

### Irregularities

If at any time your *black* "train going to" needle fails to go to "on line" on giving the "line is clear" acknowledgment, or to "clear" on giving the arrival acknowledgment, the signaller at the distant station may have omitted to turn his switch handle to "on" or "off," as the case may be, before giving the signal, and you will in either case call his attention by giving the error signal. After which the signals must again be exchanged, and if still your *black* needle does not obey the signals, you must consider the instrument out of order, and act accordingly.

### Giving "Line Clear"

When you are called on the block instrument, you must first signify your attention. The distant station will then give the signal 2 ("is line clear"), and you must enter the time of this signal in the Train Register Book, in the column headed "line clear applied for" on the proper page (trains from _____ station). If the line is clear, turn your switch handle to "on," and then give the signal 3 ("line is clear") and when it has been acknowledged, you will enter the time of this signal in the Train Register Book, in the column headed "line clear given" on the proper page. If the line is not clear, keep the switch handle at "off," and give the signal 1.3.1 ("Line is not clear"), which must be acknowledged by the distant station repeating it; and as soon as the line is clear, you will, after obtaining the attention of the distant station, turn your switch handle to "on" and give the signal 3 ("line is clear"), and when it has been acknowledged you will make the entry in the Train Register Book, as instructed above. On the first beat of the "line is clear" acknowledgement signal, your *red* "train coming" needle will go over to "on line."

### Irregularities

If the *red* "train coming" needle does not turn to "on line" on the receipt of the "line is clear" acknowledgment, either you have omitted to turn your switch handle to

"on" or the instrument is out of order. If you have omitted to turn your switch handle, the distant station will immediately find it out, and give the error signal, followed by the "is line clear" signal a second time, which you must, as instructed before, turn your switch handle to "on" and give the signal 3 ("line is clear"). In case you have omitted to put the switch handle to "on," and if the distant station does not give the error signal, you must call his attention to it by giving the error signal yourself.

If, however, you have correctly placed your switch handle at "on" while giving the "line is clear" signal, and still your red needle does not turn to "on line" when the acknowledgment signal is received, and if the signaller who asked for "line clear" does not immediately send the error signal, you must make the blocked line entry in the Train Register Book, with a remark in remarks column as to the failure of the needle to go to "on line." You must also keep your switch handle at "on," and understand that the line is blocked until the train arrives at your station.

### Signalling Arrival of Train.

When you are satisfied that the train has arrived at your station, you will first turn your switch handle to "off," and then give the arrival signal; and the distant station having acknowledged this by repeating it, you will enter the time of this signal in the column of the Train Register Book, headed "cleared line," on the proper page (trains from _____ station).

### Irregularity

If the *red* "train coming" needle does not turn to "clear" on receipt of the arrival acknowledgment, either you have omitted to turn your switch handle to "off" or else you instrument is out of order. If you have omitted to turn your switch handle, the distant signaller will give the error signal, and you must then turn your handle to "off" and again give the arrival signal, which will be acknowledged by the distant station, and your *red* "train coming" needle will turn to clear. If, however, though you have properly turned your switch handle to "off," your needle does not return to "clear," on the receipt of the acknowledgment, you must immediately report your instrument out of order.

### Irregularity due to Lightning or contact with other Wires

No false current, whether due to lightning or contact with another wire, is able to move either of the indicating needles, but the apparatus may be put into such a state as to move the *black* "train going" needle from one side to the other when you press your plunger to give a signal. If at any time, therefore, on pressing your plunger your *black* "train going" needle moves when you know it ought not to do so, immediately stop what you were about to send, and, on obtaining the attention of the distant station, give the signaller's testing signal. The signaller at the distant station will acknowledge this, and on again pressing your plunger the needle will go back to its proper place.

### Interruption of Communication

If, after calling some little time on the block instrument, you do not obtain attention, you must call the station you want on the telephone, and tell the signaller to attend; if after this you do not gain attention, you must report the block telegraph over that section to be out of order.

| Signal | Number of Beats | Acknowledgment |
|---|---|---|
| Warning | 1 | |
| Is line clear | 2 | |
| Line is clear | 3 | 1.1.1 |
| Line is not clear | 1.3.1 | 1.3.1 |
| Departure, passenger | 4 | 4 |
| Departure, goods | 1.3 | 1.3 |
| Departure, ballast | 2.2 | 2.2 |
| Departure, engine | 1.2.1 | 1.2.1 |
| Arrival | 2.3.2 | 2.3.2 |
| Attention | 2.2.2 | 2.2.2 |
| Obstruction, danger | 1.7 | 1.7 |
| Train passed without tail lamp | 1.8.1 | 1.8.1 |
| Stop and examine train | 9 | 9 |
| Error | 5.5 | 5.5 |
| Inspector testing | 4.4 | |
| Signaller testing | 4.4.4 | |

*Table 1. 1883 Code of Signals. After table in Government Gazette, Nov 30, 1883 page 2663.*

Any irregularity that may occur must be entered in the remarks column of the Train Register Book, and reported at once to the telegraph engineer.

The block instruments are to be used only for train signalling, and under no circumstances whatever may they be used for any other purpose.

The telephones are to be used for communicating upon subjects other than for signalling trains, and under no circumstances may they be used for the purposes for which the block instruments are provided.

### Testing by the Telegraph Engineer or Authorized Inspector

First the testing signal, 4.4 beats, will be exchanged.

The the Inspector will give the testing signals, followed by the "is line clear" signal (2 beats).

To this the distant station will reply by turning his switch handle to "on," and giving the testing signal, followed by the "clear" signal (3 beats).

The Inspector will then give the testing signal, followed by acknowledgment.

The distant station will then turn his switch handle to "off" and give the testing signal, followed by the arrival signal (2.3.2 beats).

The Inspector will then give the testing signal followed by the arrival signal.

The same signals will then be exchanged in the reverse way, namely:-

The distant station will give the testing signal, followed by "is line clear" signal.

The Inspector will reply by turning his switch to "on" and giving the testing signal, followed by the "clear" signal, and so on.

NOTE.- The instruments must never be tested while a Train is on the section.

### General Regulations for Working the Absolute Block Telegraph on a Double Line of Railway

1. The object of the system of Electric Train-signalling is to prevent more than one train or engine being between any two block cabins or stations on the same line at the same time. This is accomplished by not allowing any train or engine to leave a block cabin or station till the next previous train or engine has been signalled as having arrived at, or left, the block cabin or station next in advance.

Every train or engine, without exception, must therefore be signalled in its progress from block cabin to block cabin. The last vehicle on every train must carry a tail lamp by day as well as by night.

The block cabins or stations from which the signalling is done are furnished with instruments which will signal the trains running in both directions, and the system under which the instruments are to be worked, and the mode of indicating the trains will be laid down in the Code or Regulations supplied to Signalmen, or exhibited in the cabins for the guidance of the persons in charge.

2. The Block signal instruments are exclusively for the signalling of trains, and must not be used for any other purpose.

On the lines worked on the Absolute Block system, a second train or engine must not be allowed to enter a section until the preceding train or engine has been signalled as having passed out of the section, excepting under circumstances specified in rules to meet cases of train or telegraph failure. The "danger" signal must be exhibited at both the home and distant semaphores, to protect trains or engines standing at stations or intermediate signal cabins; and when any train or engine has gone forward into the onward section, the semaphore signals which control the entrance of trains and engines into such sections must also be put to and kept at "danger" until telegraphic information has been received from the block cabin in advance that the preceding train or engine has passed out of that section.

In cases where advance starting semaphore signals are provided at the entrance to a block section, trains coming off the preceding station, AFTER STOPPING at the home semaphore signal, may, on that being lowered, proceed cautiously to the advance starting semaphore, and there stay till that semaphore is lowered.

When a signalman has lowered the advance semaphore signal for a train which has drawn up to it to proceed into the next section, he must, after carefully ascertaining that the train has cleared this signal, raise it to danger before lowering the home semaphore for another train to advance.

3. Unless special instructions are given to the contrary, the line must be considered clear, and the signal "line clear" be given immediately the last vehicle has passed the home signal post. - *Note - This Rule is to be read with Rule 12.*

4. Should it become necessary to block a section, in consequence of a break-down obstructing the line, or other circumstance causing it to be necessary to stop any approaching train, the signalman at the station where the obstruction takes place must use the means authorized by his regulations for preventing any train leaving the block cabin in the rear.

5. Should there be reason to suppose that both lines are fouled, the signalmen must without any delay block the lines in both directions. - *See Rule 18.*

6. No shunting or obstruction of any sort on the main line must be allowed to take place at a station until the signalman has taken the proper steps to prevent any train from leaving the next block cabin, in either direction or both directions, as circumstances may require.

7. Ballast trains are not to stop to load or unload between block cabins without first stopping to advise the signalman of the previous block cabin of the intended stoppage and its probable duration.

8. All signals must be distinctly repeated until acknowledged. No signal must be acknowledged until it is clearly understood. A signal is not complete until it is acknowledged, and it may only be recorded in the Train Register Book when completed. A proper acknowledgment must be clearly received before a second signal is sent.

9. Every signal sent and every one received must be entered in the Train Register Book *immediately* after such signal has be sent and received.

10. After a train has left a station, and until it has arrived at the next station in advance, and the signal"clear" has been properly received, the block instrument needle will point to "on line," and the out-door signals for the line to which that block instrument signal applies must also be at danger.

11. The "Clear" signal is not to be given unless the line is actually clear, and no obstruction of the line must be permitted after the "clear" signal has been given.

12. Before giving the "clear" signal, the signalman must satisfy himself that the whole of the train has passed his cabin and that no portion has become detached on the road.

Should a train pass a block cabin without a tail lamp on the last vehicle, the "stop and examine train" signal must be sent to the station in advance, and the signalman must not give the "clear" signal to the station in the rear, but must give the "train passed without tail lamp" signal. This signal being acknowledged, the signalman at rear station must stop any train following, and verbally instruct the driver to proceed cautiously, giving him the reason. As soon as the train, the driver of which has been cautioned, has passed the block cabin or station from whence the "train passed without tail lamp" signal was received, the signalman then will re-commence signalling in the ordinary manner.

13. On receiving a train departure signal, a preparatory notice must at once be signalled to the next block cabin or station in advance, by giving the "warning" signal which is to denote train coming.

14. Should the block instrument remain at "clear" after the departure of a train has been signalled, the signalman must not understand by this that the line is clear, but that the electric signal has been neglected. In such a case he should at once give the "attention" signal.

When the electric signal in a block cabin remains at "on line" for a longer period than usual after a train has passed, the signalman should remember that then is just the time when he requires to be most careful. He should not get impatient, but wait a while before he does anything. Signalmen are sometimes over anxious to prevent the detention of a train, but they should bear in mind that it is better to delay a train than run the slightest risk of accident. If the signal remain at "on line" a very unusual period, the "attention" signal should be given and an entry made in the Train Register Book.

15. When a signalman has received a "departure" signal, and has acknowledged it, and the train so signalled does not arrive at his cabin in the usual time, then, should he receive the "attention" signal on the bell or gong, or any signal which he does not understand, he should always in reply give the "obstruction" signal; and any train proceeding in the contrary direction must be stopped, and the driver and guard specially informed and cautioned before entering the section, as an accident fouling both lines may have occurred.

16. Whenever it may become necessary to block the up or down line or both in consequence of the break-down of any engine or train, or other unusual cause of obstruction at a station or on the line, the "obstruction" signal is to be given to the next signal cabin from which trains or engines might approach, and the electric block instrument as well as the out-door signals are to be maintained at "danger" until the obstruction is cleared. The out-door signals at the station receiving the obstruction signal should be place at "danger" before the "obstruction" signal is acknowledged. The "obstruction" signal is also to be given to the stations on every side from which trains or engines might approach, previous to the crossing or shunting of any trains or vehicles.

17. The "obstruction" signal is to be received, in all cases, in the fullest sense as an obstruction signal, and no train is to be allowed to proceed on the road so blocked until the "clear" signal has been received.

18. Should an incorrect signal or acknowledgment have been accidently sent, the "error" signal must be given and repeated back, and then the correct signal.

19. Should an incorrect or unintelligible signal or acknowledgment be received, the "attention" signal must be given and in reply the signalman called will carefully repeat the last signal intended to be sent by him. The "attention" signal should also be given and replied to by an exact repetition during storms of lightning, or whenever the signalman thinks it necessary to assure himself of the correctness of the signals shown on his instrument.

20. Should a signal or acknowledgment be neglected, the "attention" signal must be given, and in reply the signalman called will correct his omission. No reply is, in all cases, to be considered as indicating the the line is blocked.

21. If from any cause the needle- pointers of the block telegraph instrument cannot be moved, the signalling must be carried on by means of the code of signals on the bell or gong until the indicating part of the instruments is set right.

22. Should electric intercommunication be totally stopped, the progress of trains and engines must be regulated in strict accordance with the general rules for working the line by means of ordinary signals, only with this addition, that the guard and driver of every train must be cautioned by the station-master or signalmen that the preceding train has not been signalled "clear," and that a good look-out must be kept.

23. In the event of any interruption occurring in the working of the instruments, either through disarrangement of the apparatus or from any other cause, a report is to be immediately forwarded by the quickest means to the Telegraph Engineer and General Traffic Manager.

24. Every block cabin must be provided with a Train Register Book, in which must be entered all up and down trains under their respective columns; giving the description of train, the time it is signalled, the time the line is blocked, and the time it is again cleared.

All entries must be made direct into the book, and no erasures allowed. When a wrong entry is made, the pen should be drawn through it in such a manner as to show that it is crossed out, and yet not so as to make it illegible.

25. When signalmen change duty, a line should be drawn across the book immediately beneath the last entry. The signalman going off duty should sign his name above this line, with the remark "off duty," and the time. This signalman who "takes on" should sign his name under the line, with the remark "on duty," and the time. Block cabins must be visited by an inspecting officer at least once a week, when Train Register Books must be examined, as well as all other arrangements of the cabin.

26. All signals must be given as distinctly as possible, free from haste and temper. Signals are often made so fast that the instruments cannot render them clearly and unmistakably. This should not be. There is always ample time for all signalling purposes between the trains, and it is always found that the man who does his work in a steady methodical manner will occupy less time in doing it than the one who works his instrument in an intemperate manner, quite regardless as to how the signals reach his comrade.

27. It must be distinctly understood that the signalling trains on the block system does not in any way dispense with the use of home, distant, hand, starting, or detonating signals, whenever and wherever such signals may be requisite for the safety of traffic. Indeed, those other and necessary precautions should never be even relaxed. The safety of railway traffic is only to be secured by overlaying one precaution with another, and duly enforcing the principle of each. Thus, when a train breaks down within a block section, the guard of the train must not think that he is perfectly secure, as the block at the cabin in his rear will be maintained till he arrives at that in advance; but he must, as his rules prescribe, immediately go back, and by means of his flags, lamp, or fog signals, protect the rear of his train. It is by those checks upon checks that any evil is to be averted.

H.M. Barter
Acting General Traffic Manager

The common seal of the Board of Land and Works was affixed hereto, in the presence of the undersigned, two members of the Board, on the fifteenth day of November, in the year of our Lord One thousand eight hundred and eighty three.

Alfred Deakin,
Vice President (L.S.)
A. Morrah,
Member

# FLEMINGTON BRIDGE AND ROYAL PARK SPOIL SIDING

Andrew Waugh

Almost immediately after leaving Macaulay the Coburg line begins to climb at 1 in 50. This grade continues for over three-quarters of a mile and then eases to 1 in 81 for the last third of a mile into Royal Park station. The first half of the 1 in 50 grade is also on a curve of 30 chains radius as the line climbs on an embankment parallel to the Moonee Ponds Creek. Flemington Bridge railway station is located just before the end of this curve, perched high on the embankment between the bridges over Racecourse Road and Flemington Road.

The station name, however, does not refer to the bridge over Flemington Road. Instead, it refers to the bridge carrying Flemington Road over the Moonee Ponds creek, adjacent to the station. The suburb on the other side of Moonee Ponds Creek is 'Flemington' and,according to the Chronological Index, this was originally the station name. No doubt there was confusion between this station and the more important station at 'Flemington Racecourse' and 'Flemington' had been renamed 'Flemington Bridge' by 1 October 1888. The exact date is not known, the change is not shown in either the Government Gazette or in the Chronological Index. Possibly the name change occurred at, or shortly after, the opening of the station. In this article, I will consistently use 'Flemington Bridge' instead of 'Flemington'.

## Opening and Initial Signalling

There were no stations between North Melbourne and Royal Park when the Coburg line was opened on 9 September 1884. A single platform was provided on 10 April 1885 when Flemington (Bridge) was opened for passenger traffic. A second platform was added on 2 September 1888 when the line was duplicated between Macaulay Road and Langridge St (North Carlton).

Flemington (Bridge) was not a block post at this time. From duplication, if not before, however, it is likely that the station was equipped with Up and Down home signals worked from a quadrant on each platform as shown in Figure 1a.

The provision of such signals was standard practice at non-block stations in Victoria. Normally there would be only one train in each block section. However, there were a number of reasons why two trains might be in one section. First, someone could have made a mistake - either the Signalmen at the block posts, or the Driver of the following train. Second, the block instruments could have failed and trains were being worked under Block Rule 27 by time interval. Third, the first train could have broken in two and a following train admitted to the section under Block Rule 21d. Finally, the first train could have failed and a relief train or engine admitted to the section under Block Rule 16.

For these reasons the Guard of a train was required to protect his train if it was stopped by accident, failure, obstruction or any other exceptional cause (Rule 239). The most likely place for a train to be delayed was at a station and it is likely that this was the reason that Up

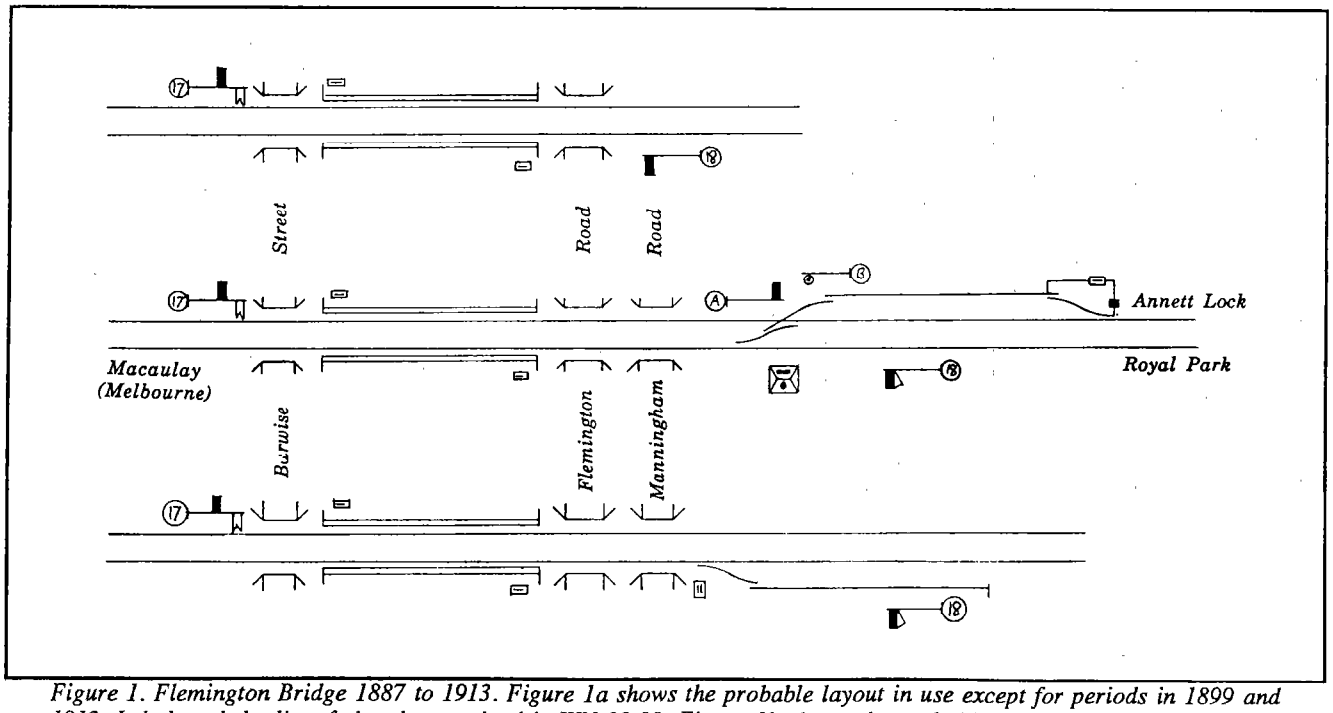



*Figure 1. Flemington Bridge 1887 to 1913. Figure 1a shows the probable layout in use except for periods in 1899 and 1912. It is based the list of signals contained in WN 29/99. Figure 1b shows the probable layout while the first Royal Park spoil siding was open in 1899. This diagram is based on the list of signal in WN 6/99. It is possible that the siding was on the Up side of the line; but this would have required Post 18 to be located well beyond the Annett Locked points at the Down end. Figure 1c shows the probable layout for the second Royal Park Spoil Siding in 1912.*

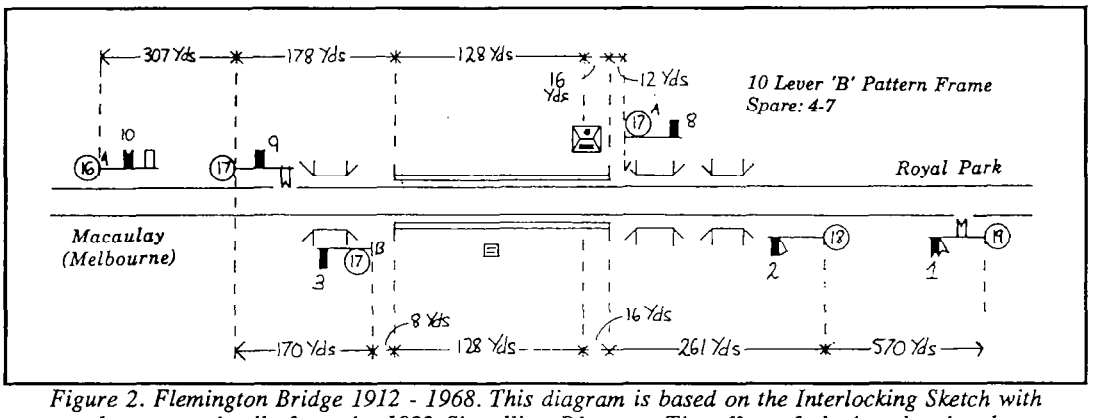



*Figure 2. Flemington Bridge 1912 - 1968. This diagram is based on the Interlocking Sketch with supplementary details from the 1932 Signalling Diagram. The effect of placing the signals on any convenient signal post can be seen.*

and Down home signals, normally at clear, were provided at non block stations. If a train was unusually delayed the Guard could restore them to danger instead of laying detonators and flagging.

### The first Ballast Siding

The deep cuttings through the Royal Park, on the Down side of Flemington Bridge station, were the source of earth on at least two occasions. The first was in late 1899 when the spoil extracted was used as filling to construct the Gravitation Yard in the Melbourne Yard. To load the spoil a ballast siding was constructed on the Down side of Flemington Bridge by August 1899.

The Siding was controlled by a small Signalbox, known as 'Temporary Signal Box'. It was equipped with a 6 lever frame, block instruments, and a block switch. The box was brought into service on Monday, 7 August, and the notice states that the box would be shortly be switched in daily (Sundays excepted) as a block post for working the Ballast train. When switched in the sections were Macaulay Road - Temporary Signal Box - Royal Park.

The Weekly Notice contained a number of instructions respecting the working of the Ballast Train. On the Down journey the Ballast Train had to leave North Melbourne at least 10 minutes before a following passenger train, unless the Signalman at North Melbourne had arranged with the Signalman at Macaulay Road to shunt the Ballast train so that it could be overtaken. On the Up journey, the Signalman at the Spoil Siding was not to let the Ballast Train depart until he had obtained permission from the Signalman at North Melbourne, presumably to ensure that the Ballast train had a clear run through the junction without blocking other trains.

When the Ballast train arrived at the Spoil Siding, it was shunted clear of the Down line using the Annett locked points at the Down end of the siding. The Guard worked these points, the Signalman handing him the Annett key from the duplicate lock on the frame. While the Guard had the key, the Signalman was specially instructed not accept a following Down train or light engine. This restriction was probably due to the risk of a portion of the train breaking away on the steeply rising gradient.

This gradient was also the cause of restrictions on the Up line. Before the Signalman at the Spoil Siding could give "Line Clear" to Royal Park for an Up train, he had to obtain "Line Clear" from Macaulay Road. In addition, the use of the "Section clear, but station or junction blocked" signal was prohibited for accepting trains from Royal Park. This prevented the Signalman from accepting an Up train when the Ballast train, or its engine, was shunting on the Up line.

It appears that this interesting little box was only in use for around two months. No closure notice was published in the Weekly Notice, but the Interlocking Register states that the Signalbox was abolished and the siding closed on the 9 October 1889. The block section then reverted to Macaulay Road - Royal Park for all trains.

### The second Ballast Siding

It appears that the second Ballast Siding was also opened to supply filling for the construction of a Gravitation Yard. This time it was the construction of the sidings at Weighbridge Junction. On 10 July 1911, a two lever ground frame, known as the 'Manning St Auxiliary Apparatus' [sic] was provided near Flemington Bridge station. Concurrently, the Up home signal, Post 18, was moved 40 yards in the Up direction.

This time it appears that a single spur siding, trailing into the Up line, was provided. The likely layout is shown in Figure 1c. The function of the levers - one point lever and one signal lever - suggests a trailing spur into the main line. The name of the frame suggests that it was located near Manningham St, at the Up end of the cutting.

The new siding also appears to have been established as a block post in the Macaulay - Royal Park section. No mention of the opening of the Siding appears in the Weekly Notice, but it is noted that 'Royal Park Spoil Siding' was disestablished as a block post in late February 1912. This notice presumably noted the closure of the second ballast siding.

### A Block Post at last

Flemington Bridge was opened as a block post in early May 1912, probably from the introduction of the Winter timetable on May 1. The sections were Macaulay - Flemington Bridge - Royal Park. A block switch was provided and the initial block hours were from 6.30 a.m. to 8.30 a.m. weekdays. It must have been necessary to divide the block section fairly urgently as Flemington Bridge was still only equipped with Up and Down home signals. Given the steep falling gradient on the Up line, it might have been thought that the lack of signals would have resulted in a few special instructions. The instruction in the Weekly Notice, however, merely required that Signalmen and Drivers observe Regulation

60: "No train must pass a Home Signal at the Danger or Stop position..."

A Down Starting signal was provided in early June 1912 on Post 17A. This allowed Down trains to be admitted to the platform to await "Line Clear". Previously, trains would have been required to wait "Line Clear" standing at the Down Home signal. Consequently the engine would have had to start its train twice from a dead stand on the 1 in 50 grade and 30 chain curve.

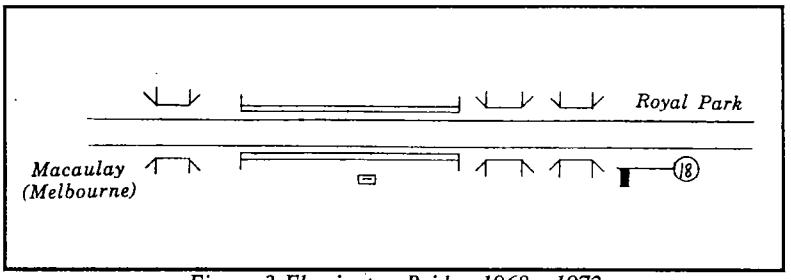


*Figure 3 Flemington Bridge 1968 - 1972*

Full signalling was not provided until the 24 July 1913. On this date three additional signals were provided: a Down Distant signal on Post 16A (below Macaulay's Down Starting signal); an Up Starting signal on a new Post (17B) located at the end of the Up platform; and an Up Distant on Post 19 (with Royal Park's Down Distant). Post 18, the Down Home signal was moved in 148 yards.

The signals were worked from a 10 lever 'B' pattern frame installed in a signal bay on the Down platform. The layout is shown in Figure 4.

An unusual feature of the signalling at Flemington Bridge was the control of both the Up Home and Distant signals by quadrants on the Up platform. These quadrants were provided to allow the Guard of an Up train to protect his train when Flemington Bridge was switched out. Similar quadrants were not necessary on the Down platform as Flemington Bridge would normally be manned during passenger traffic and the Guard could easily gain access to the interlocking frame. A number of other block posts were provided with a similar control over the Home signal but not over the Distant. This would have provided some protection, but not a lot, as any following train would have already passed the Distant signal at clear and the Driver could well miss the Home signal at Danger. The control of both the Home and Distant signal at Flemington Bridge was an improvement in this respect, no doubt the steeply falling grade was reason.

In 1938 the Stationmaster at Macaulay (who supervised Flemington Bridge) was instructed by the Block and Signal Inspectors:

*To obviate the probability of checks to Down Goods trains at signals at Flemington Bridge while the signal box is "switched in" the Signalman at Flemington Bridge is to obtain line clear from the Signalman at Royal Park for a Down Goods before accepting the Down Goods from Macaulay.*

### Closure as a Block Post

Flemington Bridge was usually switched in only for short periods. In WN 27/48, issued on 6 July, for example, Flemington Bridge was only a block post on Mondays to Friday from 7.35 a.m. until the 8.50 a.m. Down Goods cleared Royal Park and from 5.5 p.m. until 6.25 p.m. and on Saturdays from 8.55 a.m. until the 8.50 a.m. Goods cleared and from 1.3 p.m. until 1.37 p.m.

Flemington Bridge was switched out "until further notice" in the middle of April 1954. By November 1959, Flemington Bridge was not even listed as a block post in the WTT and it is likely that the block instruments had been removed. The interlocking frame and signals, however, were not removed until the 25 February 1968. All the signals were abolished on this date except for the Up home signal on Post 18. This signal was operated by the quadrant on the Up platform and still allowed the Guard to protect an Up train. No equivalent Down Home signal was provided to protect trains standing at the Down platform.

Post 18 was not abolished until 8 April 1972 when three position automatic signals replaced double line block working on the section Macaulay - Royal Park.

## SIGNALLING ALTERATIONS

*(Continued from Page 82)*

(16.08.1992) **South Dynon Container Terminal (Flashing Light Signals at 'R' Gate)**

The flashing lights located at the level crossing and eastern approach to the southern most weighbridge cabin are operated by 5P key switches.

The key switches are located on either side of the level crossings and near the derail blocks on the western side. The key switches are of the three position type permitting operation of the flashing lights after the operator has removed the key.

Notice Boards lettered "TRAINS MUST NOT ENTER ROADWAY UNTIL FLASHING LIGHTS AND BELLS ARE OPERATING" are provided on either side of the level crossing.

Prior to any train movement taking place, the Employee in charge of safeworking in the Terminal must remove the derail blocks and activate the Level Crossing Warning System.

At the conclusion of any train movements in the vicinity of Tracks Nos 1 to 3, the Warning System must be turned off and the derail blocks replaced. (O.3112/92, WN 31/92)

# ODDS & ENDS

*Unless otherwise noted, the following odds and ends have been taken from the Station Order Books kept by the Superintendent of Safeworking from the mid 1920s to the mid 1970s. These books are now in the AFULE collectiion held at The University of Melbourne Archives.*

*Memo from D.C. MacDonald, District Superintendent, dated 6.11.1933*

Shunting of Sleeping Cars of Mildura Line Trains at Ballarat

Commencing forthwith, when the Sleeping Car of the Mildura Line trains is being attached or detached at Ballarat, passengers who so desire may be allowed to remain in the passenger cars during shunting movements subject to the following conditions.

This instruction applies specifically to the shunting at Ballarat in connection with attaching and detaching the sleeping car of Mildura Line trains and does not apply to other trains.

Prior to the arrival of the Mildura Line train at Ballarat, the Conductors must advise the passengers in the leading car or cars that such cars will be shunted and that it will not be necessary for the passengers to leave the train, unless they so desire, during shunting movements. He must also lock the doors on the pit side. The doors must remain locked until the shunting movements have been completed.

Prior to the commencement of shunting operations, the Conductor must take charge of the car or cars which will be shunted. He must prevent passengers from alighting whilst the cars are in motion and during the whole of the time that the cars are away from the platform.

The whole of the movement must be supervised by the Officer in Charge who must not allow the cars to be moved until he is satisfied that the conductor is on board and quite ready for the movement and that the gangway doors at the ends which are to be uncoupled are locked.

The shunter must not signal the Driver forward from the platform without permission from the Officer in Charge.

For the movements in connection with Down trains, the Signalman at Ballarat 'B' must not allow the engine with the cars to go forward unless the line is clear to the Down Starting Signal, Post 31.

Prior to each setback movement over facing points not equipped with lockbars, the Signalman must sleeve each point lever which operate points without lockbars for such movements. Every movement must be controlled by a fixed signal. When coming on to the sleeping car in No 3 road, the shunter must stop the engine and cars well clear of the sleeping car and signal the Driver to ease up slowly.

The red light must not be removed from the sleeping car until the engine and car or cars have stopped. When the sleeping car is to be detached from an up train the Officer in Charge must before giving permission for the movement, satisfy himself that all passengers have left the sleeper and that the Conductor has taken charge of the leading cars and is ready for the movement.

The forward shunting movement must be made towards the main passenger line which must be clear to Post 7. The cars must be stopped clear of the setback disc on Post 11. The setback movement must be made towards No 2 or No 3 road and the road must be clear for the movement. The set back movement must not be made towards the car sidings with passengers on board.

The Signalman at Ballarat 'A' must sleeve all point levers which operate points not secured by lockbars for each facing movement.

Every movement must be controlled by a fixed signal. Under no circumstances must any car with passengers on board be left standing with the engine detached whilst away from the platform. [...]

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*Memo from the District Superintendent dated 5.11.1932.*

Ballarat

Routing of the 7.10 pm (No 80) Car Goods through Yard and Goods Departure Road on Wednesdays and Fridays.

Commencing forthwith, when owing to the length of the train, No 80 Car Goods cannot be routed via the main passenger departure road from No 5, the following instructions must be strictly observed :-

The train will be routed via the goods departure road from No 5 Road and prior to placing the signal to proceed for its departure, the Signalman at Ballarat 'A' must receive verbal permission from the Yard Foreman who before giving such permission must satisfy himself by personal observation that the hand points are set in the proper position and that the catch points in X are properly set for the movement.

The Yard Foreman must be in attendance at the hand points to personally supervise the passage of No 20 through the goods departure road and must not allow any movement to foul the passage of that train.

The Signalman at Ballarat 'A' must have a clear understanding with the Signalman at Ballarat East as to which road No 20 will be routed on and each Signalman must record the particulars in the Train Register Book.

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*Memo for District Superintendent to SM Ballarat dated 13 March 1934 (9/298/3)*

Signalling instructions in connection with departure of trains from No 1 (Platform) Road.

It must be distinctly understood that the existing practice of operating the necessary fixed signals must not be departed from. After Engine or Engines have completed their requirements on No 4 Road, the disc and calling on signal on Posts 11 & 21 respectively must be displayed for the set back movement to train in No 1 Road.

If the train is of such a length that Engine is standing outside of controlling departure signal on Post 21, such train must be set back in order to permit the Departure Signal being placed to the "Proceed" position. Under

these circumstances, the Signalman at 'A' Box will inform the Officer in Charge accordingly and the latter, before instructing the Guard to set his train back, must arrange for the Signalman at Lydiard St to place the down departure home signal to "proceed" for the movement.

The present arrangements in connection with the Signalman being on duty at Lydiard St on Sunday mornings for this special movement is to be continued.

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*Memo from the Block and Signal Inspector to SM Ballarat dated 15 March 1947*

Starting and Stopping of Trains

The attention of all concerned is specially directed to page 320 General Appendix containing amendment GA 486 (25/3/41) which is as follows:-

GAA 486 (25/3/41) - Starting and Stopping Trains

8A a) Except as shown in sub-clause b) hereof, when a train or shunting movement is to be performed and the engine is standing beyond the controlling fixed signal the Driver must, subject to the necessary hand signal from the Guard or Shunter, obtain the Signalman's verbal authority to perform the movement. In addition, the Signalman must, if practical, place the controlling signal to proceed.

b) When a Fixed Signal has been passed at the proceed position by the engine prior to coming to a stand the Driver may, unless otherwise instructed by the Signalman, proceed when the necessary hand signal has been received from the Guard or Shunter.

c) In any case, when an Engine is standing beyond a controlling Fixed Signal, a movement from any adjoining line or siding into the area affected must not be authorised by the Signalman until he, the Signalman, has first verbally informed the Driver of the engine standing beyond the signal of what is about to be done and that he, the Driver, must not move his engine until again authorised.

Add the above as a new clause 8A to page 320.

As an example in this connection, the Signalmen in 'A' Box are to note that when the engines of No 10 Express are standing beyond the controlling fixed signal on Post 21 after taking engine requirements it must be distinctly understood that after the engines have been attached to the train, the train must not commence its journey until the Driver has been verbally instructed to do so by the Signalman, and if practical the Fixed Signal on Post 21 placed to proceed. [...]

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*Memo from District Superintendent to S.M. Ballarat, dated 12 July 1951*

It has been brought under notice that instances occur in which double-headed goods trains are accepted by 'B' box from 'C' box and such trains are held at the arrival home signal at 'B' until the Yard staff can deal with same. In such cases the Doveton St. level crossing is blocked for lengthy periods, and in future, prior to the Signalman at Ballarat 'B' box accepting double-headed trains from 'C' Box, he must confer with your office and the Yard Foreman to ascertain whether the train can be brought in clear of crossings at Doveton St. and Lydiard St.

If it is not practicable to admit trains, they must not be accepted by the Signalman at 'B' Box, but held at the Up starting signal at 'C' Box until practicable to be given a clear run into the yard. The instructions on page 265 of General Appendix are to be observed.

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*Memo from J.S. D'Haine, District Superintendent dated 26.01.1954*

Handling of No 69 Adelaide Express at Ballarat

To ensure that the van of No 69 Down Adelaide Express will be at the platform whilst the train is at the station on Mondays to Saturdays inclusive, the following procedure is to be regularly observed, commencing as from 1/2/54:-

Upon arrival at Ballarat, the train is to be brought to a stand when the forward portion of the leading vehicle reaches the down end of the platform. A shunter must be in attendance at the Down end of the platform to meet the train and signal the Driver to stop at the required position.

When the train has stopped the Shunter shall uncouple the Diesel locomotives from the train and instruct the Driver to proceed towards the Starting Signal. The shunter is to remain with the engines and be on the alert to signal the Driver back to the train and couple the engine to it as soon as the disc signal on Post 33 has been placed at the proceed position.

On receipt of the "ring in" signal from 'A' Signal Box, the Signalman at 'B' Signal Box shall close the Lydiard Street Gates to road traffic and place the down home signal from No 1 Road to the proceed position. The Signalman is to note the time of arrival of No 69 Express and 5 minutes before it is due to depart, he shall close the gates to road traffic and place the disc signal on Post No 33 to the proceed position and verbally inform the Driver that all is right for the train to depart upon receipt of prescribed signals from the platform (See GAA 486, page 320 General Appendix).

Should it be apparent, through any cause, that the express will be delayed at the platform, the Officer in Charge must promptly advise the Signalman in the Lydiard Street Box so that the time of the return of the engines to the train may be adjusted to avoid unnecessary delay to tram and road traffic. [...]