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The inside of a Winters Block Instrument from the back. From left to right on the top shelf is the polarised relay working the black ('Train Going To') needle, the commutator worked by the switch handle, and the neutral polar relay working the red ('Train Coming From') needle and striking the bell. On the lower shelf, again from left to right, is the 'polarised' relay, the bell plunger contacts, and the line relay. The function of the 'polarised' relay is to remember the polarity of the last incoming bell signal. When the local signalman presses the black button and the plunger, the 'Train Going To' relay is set to correspond with the position of the 'polarised' relay. The line relay closes each time a bell signal is received from the other end of the section and sends local battery current through the commutator to the 'Train Coming From' (red needle) relay. The position of the red needle is consequently altered to correspond with the position of the local switch handle each time a bell signal is received. Each of the three polarised relays have three coils. The two lower coils magnetise the pole piece (avoiding the need for a permanent magnet) while the upper coil makes the armature move. The polarised armature flops between two stops and is retained in position by gravity.

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MINUTES OF MEETING HELD FRIDAY JULY16, 2010, AT THE SURREY HILLS NEIGHBOURHOOD CENTRE, 1 BEDFORD AVENUE, SURREY HILLS

Present: - Wilfrid Brook, Brett Cleak, Graeme Cleak, Glenn Cumming, John Dennis, Graeme Dunn, Vance Findlay, Michael Formaini, Ray Gomerski, Chris Gordon, Judy Gordon, Chris King, Keith Lambert, David Langley, Bruce McCurry, Tom Murray, Brian Sherry, Roderick Smith and David Stosser.

Apologies: - Mark Bau, Bill Johnston, Steve Malpass, Greg O'Flynn, Laurie Savage, Peter Silva, Andrew Wheatland and Bob Whitehead.

The President, Mr. David Langley, took the chair & opened the meeting @ 20:05 hours.

With the recent passing of Jack McLean, The President David Langley paid tribute to the contribution that Jack McLean had made to the SRSV. As a mark of respect to Jack, David read out one of Jack's poems "Peg and Paper".

Peg and Paper

So many thousand miles there are
From Widgiemooltha to Navarre
Where staff and ticket still prevail
Upon the single line of rail
From Menzies Creek to Pinkenbah
(But nowhere on the SAR),
Are tons of staffs exchanged each year
To ascertain the Line is Clear.
The drivers all look out to see
The staff at Dartmoor or Dundee,
Because its presence means a cross
At Campbelltown instead of Ross
And to a limited extent,
A ticket in its place is sent.
The staff is seen, but it remains
To send across some later trains.
Occasionally its powers decline,
Although it mostly runs the line,
For its authority has force
Except when trains run out of course.
For then, the waiting train is brought
Across by that Line Clear Report,
The useless staff the SM locks
Away in safe, or lock-up box.
The Queensland single line behaves
According to its juggled staves,
These are changed, and trains work through
By Rule (amended) 442.
Especially when trains are thick,
The block is absolute in Vic.
And NTA's are very few,
But APIX, ACRE, phoned in lieu.
And every state, except SA,

Has variations in the play,
 And new amendments to GA's
 Are issued on alternate days.
 Well this is how it's done per book
 But no keen Blocko cares to look
 At rules consistently ignored
 And trains which run by Guess and Gawd.
 The staffs are changed, this much is true,
 But any piece of wood will do.
 The staff's not shown, nor ticket read.
 It's tied around a stick instead.
 And as for LCR's. I'd say,
 The staff is rarely locked away.
 The system is fortunate, for sure,
 If it's inside the SM's drawer.
 So when you're westward out of Leith,
 Remember those six feet beneath,
 Who left the section in the middle
 Because the SM's name was Biddle.
 And then you'll give your thanks, I guess,
 To Webb and Thompson, for ES,
 And say your prayers, at half past nine,
 For those in peril, on the line.

Minutes of the May 2010 Meeting: - Accepted as read. Michael Formaini / Wilfrid Brook. Carried.

Business Arising: - Nil.

Correspondence: - Invoice for Public Liability insurance was received.

Payment for Public Liability insurance was sent.

Invoice for rent of rooms at Seymour was received from Victrack.

Payment for rent was sent to Victrack.

Annual Return was sent to Consumer Affairs Victoria.

Roderick Smith / Vance Findlay. Carried.

Reports: - Glenn Cumming proposed a suburban signal box tour for Saturday 18 September 2010. After discussion, it was agreed to try and visit Kooyong, Gardiner, Darling, Glen Waverley, Greensborough, Eltham and Diamond Creek.

General Business: - The Secretary advised that SRSV Member Ian Michaelson passed away on 23rd March 2010.

Keith Lambert provided details about various works in the Metropolitan District. A summary of the discussion follows: -

- * A progress report on the Newport Stabling Sidings Project was provided.
- * New turnouts have been installed at Westall.
- * The Mobil Sidings at Altona Junction have been upgraded for use by Metro Trains work trains.
- * The installation of concrete sleepers between Richmond - Caulfield has been completed.
- * Installation of concrete sleepers is now underway between Dandenong - Pakenham.
- * The back platform at Brighton Beach is to be returned to service.

Brett Cleak provided details on a variety of projects underway around the state. A summary of the discussion follows: -

- * Boom barriers and new signals have been provided at Rochester.
- * A two position automatic signal will be provided at Creswick prior to the commissioning of power signalling.
- * Earthworks for the new crossing loop at Elders Loop had commenced.
- * Moorabool Viaduct is under going an engineering evaluation prior to the installation of a second track across the viaduct.

Chris Gordon described a Metro Trains proposal for duplication between Heidelberg - Rosanna.

Chris King spoke about patents from McKenzie & Holland and Saxby & Farmer for "Somersault" signals and asked what the differences between the patents were.

Chris King asked about early relay interlockings in Victoria with emphasis on the installation at Mitcham.

Brett Cleak described some of the differences in relay interlockings designed by the Victorian Railways and those designed by Contractors.

David Stosser asked if there had been any progress on the works at "C" Siding at Upper Ferntree Gully. It was noted that there had been no progress at this time.

Wilfrid Brook advised that the ARHS Victorian Division is looking for a guest speaker on Double Line Block for a monthly meeting.

Tom Murray advised that the triangle connection for SG trains at Tottenham is now in service.

Discussion took place on recent works on the SG Line in the North East of the state.

Syllabus Item: - The President introduced member Keith Lambert to present the Syllabus Item.

Keith presented a collection of 20 slides from Victoria in the form of a "Where is it?" type quiz.

The slides were from the collections of Keith and Alan Jungwirth & featured a variety of locations, both country and metropolitan, and from different decades.

The meeting was given ample opportunity to view the slides & deduce, estimate or just plain guess the location of each slide, with each slide receiving the mandatory appreciative comments.

Michael Formaini and David Langley top scored with a few other members also scoring very well.

The presentation was thoroughly enjoyed by those present at the meeting, probably more for the great collection of slides rather than being able to identify all the locations.

At the completion of the Syllabus Item, The President thanked Keith for the entertainment & this was followed by acclamation from those present, along with the promise of a future invitation to do it all again at a future meeting.

Meeting closed at 22:05 hours.

The next meeting will be on Friday 17 September, 2010 at the Surrey Hills Neighbourhood Centre, Bedford Avenue, Surrey Hill, commencing at 20:00 hours (8.00pm).

SIGNALLING ALTERATIONS

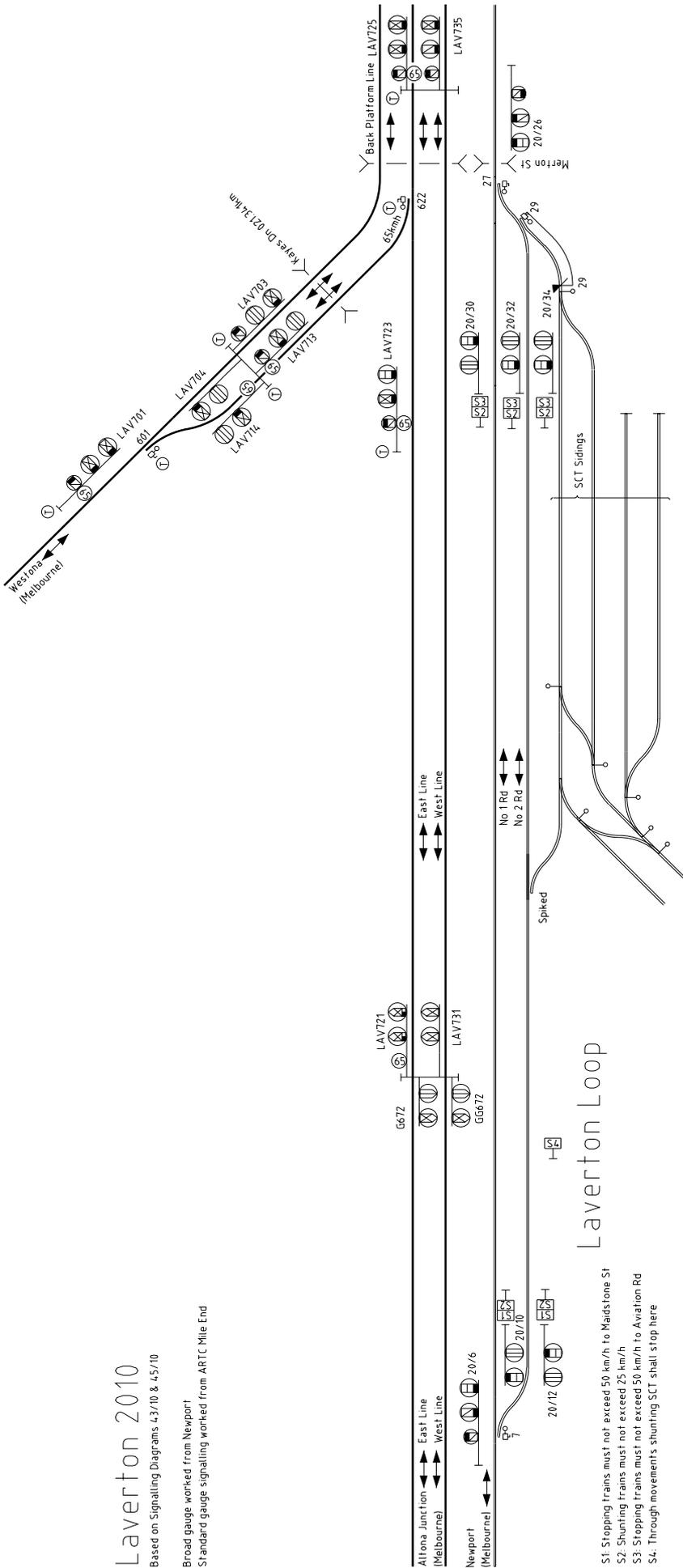
The following alterations were published in WN 22/10 to WN 32/10 and ETRB A circulars. The alterations have been edited to conserve space. Dates in parenthesis are the dates of publication, which may not be the date of the alteration.

- 09.06.2010 **Donald** (SW 61/10, WN 22)
On Wednesday, 9.6., road traffic active advance warning signs were provided at Sunraysia Highway (336.190 km) on the Up side of Donald. Amend Diagram 98/09 (Donald Loop - Morton Plains).
- 09.06.2010 **Sea Lake** (TON 353/10, WN 23)
On Wednesday, 9.6., the GEB dead end siding was booked out of service due to sleeper condition. A baulk was provided on the main line at 420.750 km (at the entrance to the siding). It appears that the line between 420.750 km and 422.800 km is out of use.
- 10.06.2010 **North Ballarat** (SW 60/10, WN 22)
On Thursday, 10.6., road traffic active advance warning signs were provided at Creswick Road (120.438 km). Amend Diagram 08/09 (North Ballarat - Wendouree).
- 11.06.2010 **Ballarat** (TON 387/10, WN 24)
On Friday, 11.6., the Ballarat East Loco Depot sidings were booked back into service. The baulk located 5 metres on the Down side of Humffray Street was removed.
- 14.06.2010 **'80' Medium Speed Indicators** (SW 135/10, WN 23)
Commencing Monday, 14.6., illuminated '80' indicators will be introduced to the Metro network. When an '80' indicator is displayed with a 'Clear Medium Speed' indication, trains may proceed at a maximum speed of 80 km/h to the next signal. When an '80' indicator is displayed with a 'Reduce to Medium Speed' indication, it indicates that the next signal is displaying a Clear Medium Speed indication with an '80' indicator. Trains travelling at more than 80 km/h must reduce speed to 80 km/h by the next signal.
- 14.06.2010 **Westall** (SW 136/10, WN 23)
On Monday, 14.6., Controlled Automatic D275 (lever 44) was relocated 92 metres in the Up direction. Crossover 643 was installed between the Shunting Track and the Through Goods Line, and Crossover 637 was installed between the Through Goods Line and the Down Main Line. Both of these crossovers were secured normal.
- (15.06.2010) **Craigieburn** (SW 132/10, WN 23)
Commencing forthwith all Down trains shunting to the sidings from No 2 Road must be routed via Down Home CGB519 and not via the Holding Road.
- 15.06.2010 **Laverton** (SW 130/10 & 149/10, SWP 2/10, WN 22 & 25/10)
On Tuesday, 15.6., the Down line at Laverton Loop (BG) was extended to run behind Platform 3 and connect with the Down main line at the Down end of the station. This line will be known as the Back Platform Line. Points 15 at the Down end of Laverton Loop were abolished. Points 620 at the Down end of the Back Platform Line were provided. The former Up line at Laverton Loop was resignalled for bi-directional running. Signals LAV721 and LAV731 were converted to LEDs. Home LAV722 was provided with a theatre indicator displaying 'E' (East Line) and 'L' (Laverton Loop). The theatre indicator for Home LAV732 will now also display a 'W' (West Line).
Diagrams 45/10 (Altona Junction - Laverton) and 43/10 (Altona Junction - Westona - Laverton) replaced 29/10 and 27/10 respectively. Operating Procedure 15 (Newport - Williamstown & Laverton, Failure of Signals) was reissued.
- 15.06.2010 **Ballarat** (SW 42/10, 43/10, 63/10, 64/10, & 65/10 WN 17, 22, & 23)
On Tuesday, 15.6., motorised security gates were provided at Ballarat East Loco Depot. Down Dwarf 42 and Up Dwarf 34 were provided and will apply between the Loco Track and the Loco Depot. Both Dwarfs have LED heads and will display a purple light when at stop. Derail and wheel chrowder 43 were provided in advance of Dwarf 42 and are operated by a dual control point machine. The gates are worked by lever 41 and are also provided in advance of Dwarf 42. The gates will operate automatically

Laverton 2010

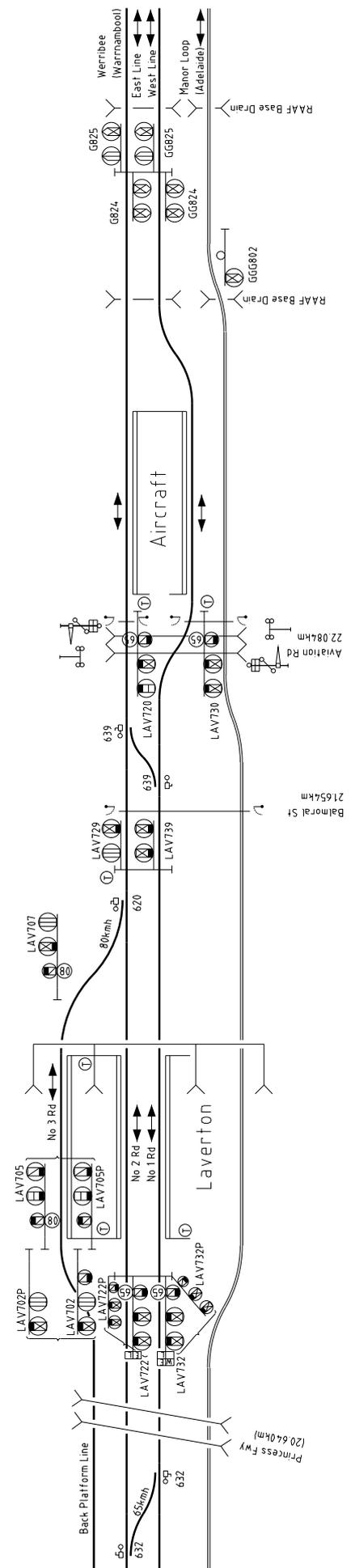
Based on Signalling Diagrams 43/10 & 45/10

Broad gauge worked from Newport
Standard gauge signalling worked from ARTC Mile End



Laverton Loop

- S1. Stopping trains must not exceed 50 km/h to Mardstone St
- S2. Shunting trains must not exceed 25 km/h
- S3. Stopping trains must not exceed 50 km/h to Aviation Rd
- S4. Through movements shunting SCT shall stop here



when either Dwarf is cleared, or may be manually controlled from the VDU, or from V5PSW keyswitches at the Dwarf signals. Dwarf C and the approach section boards for the Loco Track were abolished.

Operating Procedures 73 (Ballarat East Loco Depot) and 74 (Ballarat - Wendouree Defective Signals) were replaced. Amend Diagram 46/05 (Ballarat).

- 17.06.2010 **Diapur**
On Thursday, 17.6., the points from No 2 Road to No 3 Road were removed.
- 19.06.2010 **Pimpinio**
On Saturday, 19.6., the switch locked points at the Down end of the siding were removed.
- 20.06.2010 **North Melbourne** (SW 138/10, WN 24/10)
On Sunday, 20.6., Posts NME571 and NME573 were converted to United TC2 Tri-colour LEDs.
- 20.06.2010 **Carnegie** (SW 139/10, WN 24/10)
On Sunday, 22.6., automatic pedestrian gates were commissioned at Blackwood St pedestrian crossing (13.664 km) at the Down end of the platforms. Diagram 55/10 (Carnegie to Clayton) replaced 33/10.
- 21.06.2010 **Pimpinio**
On Monday, 21.6., the switch locked points at the Up end of the siding were removed.
- 21.06.2010 **Castlemaine** (TON 403/10, WN 25)
On Monday, 21.6., Thompson's Siding was reduced to 136m clear of the Derail and restricted to stabling track machines due to sleeper condition.
- 23.06.2010 **Nullawil** (TON 419/10, WN 25)
On Wednesday, 23.6., the Master key locked siding was booked out of service due to sleeper condition.
- 24.06.2010 **Dunolly** (SW 73/10, WN 25)
On Thursday, 24.6., the following temporary signalling alterations took effect due to a derailment. The loop was secured out of use and all trains will operate via No 1 Road. Down end Points C have been secured for No 1 Road and the point machine, banner and Annett lock have been removed. The plunger lock has been removed from junction Points L and the points secured by a point clip. Post 2 has been taken out of service and the signal heads removed. The Homes on Posts 3 and 4 have been secured normal.
Dunolly is now an Intermediate Terminal Station and will be attended for all movements. Through Train Orders (either via the main line or branch) are not permitted to be issued. A Train Order from Maryborough, Emu Loop, or Arnold BP must not be issued unless a Signaller is in attendance at Dunolly. The Signaller will operate Post 1 normally for Down trains. After receiving a Train Order for a Down train, the Signaller must inspect the lay of the junction points and secure them for the intended movement. The train crew must be informed of the lay of the points. For Up trains, the Signaller must inspect the lay of the points and issue a Caution Order for the train to pass Posts 3 or 4.
- 24.06.2010 **Rochester** (SW 68/10, WN 24/10)
On Thursday, 24.6., the following signalling was abolished:
* The Down Automatic at Elizabeth Street and its pushbutton controls on the platform and the Down end points
* The pushbutton controls for the Northern Highway flashing lights at the Down end points
* The notice boards for shunting trains over the Northern Highway, and the notice board at the Down end of the platform.
- 25.06.2010 **North Geelong** (TON 393/10, WN 24/10)
On Friday, 25.6., Ansaldo will be commissioning telemetry in the North Geelong Relay Room for the Phoenix Train Control at Mile End
- 25.06.2010 **Ararat** (TON 395/10, WN 24/10)
On Friday, 25.6., Ansaldo will be commissioning telemetry in the Ararat Relay Room for the Phoenix Train Control at Mile End
- 25.06.2010 **Speed Loop** (TON 421/10, WN 25/10)
On Friday, 25.6., No 1 Road was temporarily taken out of service and the points secured for No 2 (Down) Track. The sections Gama BP - Speed Loop - Ouyen were replaced by Gama BP - Ouyen.
- 25.06.2010 **Broadmeadows** (SW 141/10, WN 25/10)
On Friday, 25.6. the Alumurta Ave (19.518 km) pedestrian crossing was closed.
- 26.06.2010 **Gheringhap** (TON 394/10, WN 24/10)
On Saturday, 26.6., Ansaldo will be commissioning telemetry in the Gheringhap Relay Room for the Phoenix Train Control at Mile End
- 26.06.2010 **Rochester** (SW 68/10 & 69/10, TON 420/10, WN 24 & 25)
On Saturday 26.6., the existing flashing lights at Northern Highway (223.657 km) and Elizabeth St (233.969 km) on the Down side of Rochester were provided with boom barriers operated by level crossing predictors. Road traffic active advance warning signs were also provided at Northern Highway. Trains travelling at more than 50 km/h at the predictor board for both level crossings may accelerate between the predictor board and the respective level crossing.

A Down Home Post J (2 position) was provided 20 metres on the Up side of the Northern Highway. A Down Automatic (2 position) was provided 20 metres on the Up side of Elizabeth Street. Both signals will normally be at proceed. Three position V5PSW key switches will be provided at

- * Down end Points E (for the control of Home J, the Down Automatic, and the Northern Highway protection)
- * The Up side of the Northern Highway opposite Home J (for the control of Home J and the Northern Highway protection)
- * The Down end of the platform (for the control of Home J and the Down Automatic).

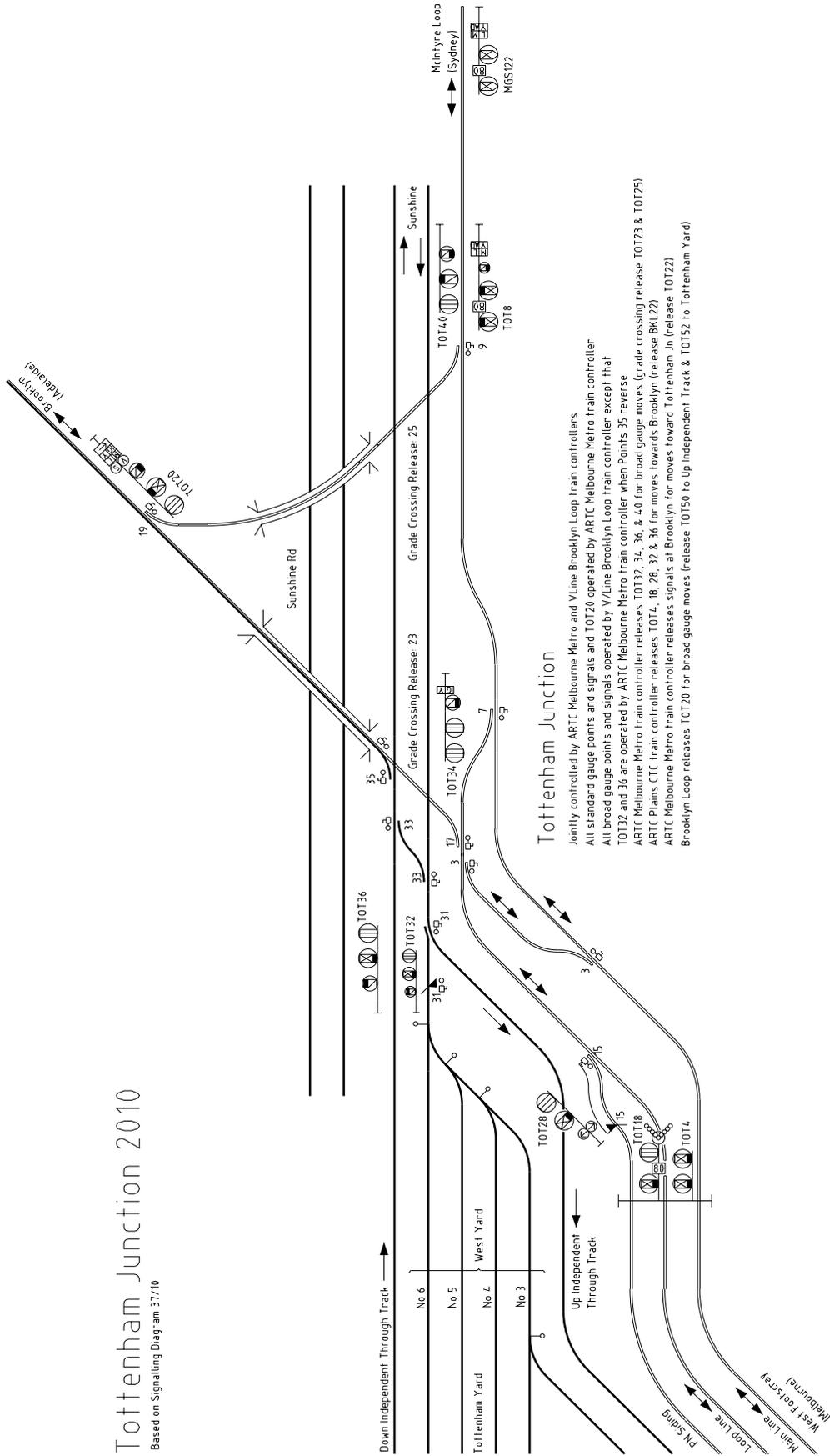
New notice boards were provided for shunting trains.

Diagram 16/10 (Rochester to Echuca) replaced 38/07.

- 26.06.2010 **Ripponlea** (SW 142/10, WN 25/10)
On Saturday, 26.6., traffic light co-ordination was provided at Glen Eira Road. Changes were also made to the express/stopping progression circuits that commence at Balaclava station.
- 27.06.2010 **Ararat** (TON 395/10, WN 24/10)
On Sunday, 27.6., Ansaldo will be commissioning telemetry in the Ararat Relay Room for the Phoenix Train Control at Mile End
- 28.06.2010 **Sandringham** (SW 131/10, WN 25/10)
On Monday, 28.6., Crossovers 8 and 13 were converted to tangential turnouts with WBS M23A dual control point machines. Dwarf SHM912 was converted to a U2L LED and will display purple for stop.
- (29.06.2010) **Sulky to Talbot** (SW 74/10, WN 25)
Diagram 32/10 (Sulky to Talbot) replaced 108/09 as in service.
- 29.06.2010 **Ararat** (TON 425/10, WN 25/10)
On Tuesday, 29.6., Ansaldo will be commissioning telemetry in the Ararat Relay Room for the Phoenix Train Control at Mile End
- 30.06.2010 **Warrnambool** (SW 70/10, WN 25)
On Wednesday, 30.6., the locked box adjacent to the Up end points was removed. Operating Procedure 65 (Warrnambool) was amended.
- 30.06.2010 **Nullawil** (TON 432/10, WN 26)
On Wednesday, 30.6., the siding was booked back into service. TON 419/10 is cancelled.
- 30.06.2010 **Shepparton** (SW 71/10 & 72/10, WN 25)
On Wednesday, 30.6., the existing flashing lights at Grahamvale Road (185.377 km) on the Down side of Shepparton were upgraded to boom barriers and road traffic active advance warning signs were provided. Remote monitoring equipment was provided. New Dookie Road (184.441 km) (Up trains only) and Ford Road (186.706 km) were upgraded to operate via predictors. Trains travelling at more than 50 km/h at the predictor boards for all three level crossings may accelerate between the predictor board and the respective level crossing.
Trains operating on the Dookie line will not operate the level crossing protection equipment at Grahamvale Road. Special instructions will be issued if any rail movements operate on the Dookie Line. The points to the Dookie line at New Dookie Road remain secured out of use.
The points to the Caltex and Shell Siding leading from the Dookie line were secured normal. The Annett locks, and Master Key/Annett Lock exchange apparatus was removed from both ends of the siding. Up Home Post 18 situated at 188 km on the Dookie line was abolished.
The points to the BP and Mobil Siding situated between Wyndham and Hayes Streets on the Up side of Shepparton were secured out of use. The Master Key locks (and associated plunger locks), catch points, and key switches to control Post 1B were abolished.
Operating Procedure 110B (Shepparton - Dookie) was reissued. Diagram 30/10 (Mooroopna to Shepparton) replaced 40/07.
- 01.07.2010 **Murtoa** (TON 423/10, WN 25)
From 0001 hours, Thursday, 1.7., the signalbox at Murtoa will be staffed by ARTC instead of VLine (when the signalbox was handed over to ARTC on 21.12.2009, an agreement was struck for VLine to staff the signalboxes until 30.6.2010).
- 01.07.2010 **Dimboola** (TON 423/10, WN 25)
From 0001 hours, Thursday, 1.7., the signalbox at Dimboola will be staffed by ARTC instead of VLine (when the signalbox was handed over to ARTC on 21.12.2009, an agreement was struck for VLine to staff the signalboxes until 30.6.2010).
- 02.07.2010 **Speed Loop** (TON 441/10, WN 26)
On Friday, 2.7., No 1 Road and the Up end trailable points were booked back into service. TON 421/10 is cancelled.
- 04.07.2010 **Brooklyn** (TON 396/10, WN 24)
From Saturday, 3.7., to Sunday, 4.7., Ansaldo will be commissioning telemetry in the Brooklyn Relay Room for the Phoenix Train Control at Mile End
- 04.07.2010 **North Williamstown** (SW 143/10, WN 26)
On Sunday, 4.7., traffic light co-ordination was provided at Ferguson St.

Tottenham Junction 2010

Based on Signaling Diagram 371/10



- 05.07.2010 **Thomastown - Lalor** (SW 147/10 & 151/10, WN 25 & 26)
On Monday, 5.7., Up Automatic T576 was relocated to the right hand side of the line. Diagram 65/10 (Ruthven to Epping) replaced 57/10 (note that Up Automatic T614 was not relocated to the right hand side of the line and is shown incorrectly on the diagram).
- (06.07.2010) **Woodend** (TON 439/10, WN 26)
Platforms 1 (East Line) and 2 (West Line) have been extended from 123m to 165m. Platform 1 was extended 34m at the Up end and 8m at the Down end, and Platform 2 has been extended 42m at the Down end.
- 11.07.2010 **North Melbourne** (SW 159/10, WN 27)
On Sunday, 11.7., Posts NME561 and NME563 were converted to United Tri-colour LEDs.
- 12.07.2010 **Westall** (SW 152/10, WN 26)
On Monday, 12.7., a trailing Crossover 624 was provided 400 metres on the Up side of Westall platforms. The points are tangential turnouts fitted with M23A dual control point machines. The crossover is secured normal. Diagram 63/10 (Westall to Yarraman) replaced 59/10.
- (13.07.2010) **Sherwood Park** (SW 79/10, WN 27)
Diagram 88/09 (Sherwood Park) replaced 76/05 as in service
- (13.07.2010) **Craigieburn** (SW 158/10, WN 27)
The routing restriction for the Holding Road has been cancelled. SW 127/10 is cancelled.
- (13.07.2010) **Northcote - Reservoir** (SW 162/10, WN 27)
Signalling Diagram 49/10 (Northcote - Reservoir) replaced 133/06 as in service.
- (13.07.2010) **Thomastown** (SW 153/10, WN 27)
The 5P keyswitches located at the Up and Down ends of the platform for the operation of Automatics T576 and T581 have been removed from service. Amend Diagram 65/10.
- 13.07.2010 **ARTC Train Control Mile End**
Between Sunday, 20.6., and 13.7., the CTC boards at Mile End will be relocated to a new building and the telemetry upgraded as part of the Melbourne to Kalgoorlie CTC project. The boards affected are South Australia West (Bolivar to Spencer Junction), Adelaide Metro (Dry Creek to Goodwood and branch to Pelican Point), South Australia South (Belair to Wolseley), Victoria North West (Serviceton to Pyrenees Loop), Victoria Plains (Ararat to Brooklyn) and Melbourne Metro.
During Phase 1 the existing panels will be relocated to the new NCCW building. During Phase 2 control will be progressively transferred to the new Phoenix panel. Phase 2 for the Victoria Plains board will extend from 24.6 to 26.6, and for Victoria North West board from 6.7. to 13.7. The Melbourne Metro panel will be the final configuration when relocated to the new building.
The field telemetry on the North West Board will be upgraded from JZA telemetry to Microlok II as follows: Serviceton (27.6 & 28.6); Kaniva (28.6 to 1.7); Miram (2.7 to 5.7); Nhill (6.7 to 9.7); Gerang Gerung (6.7 to 9.7); Dooen (10.7 to 13.7); Jung (10.7 to 13.7); and Glenorchy (10.7 to 13.7).
- 14.07.2010 **Tottenham Junction** (SW 155/10, 77/10 & 78/10, WN 26)
Between Saturday, 10.7., and Wednesday, 14.7., the new Tottenham Junction triangle was commissioned. The new standard gauge chord junctions from the dual gauge Tottenham Junction - Brooklyn line at 16.779 km (10.103 km), crosses Sunshine Road and the Main Suburban lines on a bridge, the Up and Down broad gauge Independent Goods lines on the flat, and junctions with the NE standard gauge main line at 10.618 km. The new chord is known as the 'West Leg' and the original line is the 'East Leg'.
The ARTC Melbourne Metro train controller operates the standard and dual gauge points and signals at Tottenham Junction with the following exceptions. The broad gauge points and signals are operated by the VLine Brooklyn Loop train controller. Points 35 are operated by the Brooklyn Loop train controller and operation of these points alters the control of signals TOT32 and TOT36. When Points 35 are normal (for moves towards Sunshine) TOT32 and TOT36 are operated by the Brooklyn Loop train controller and require grade crossing releases 23 and 25 from the Melbourne Metro train controller. When Points 35 are reverse (for moves towards Brooklyn), TOT32 and TOT36 are operated by the Melbourne Metro train controller and require release BKL22 from the ARTC Plains train controller.
Two grade crossing releases are provided. Release 23 is for the East Leg and Release 25 is for the West Leg. Both release Points 9, 17, and 19 from normal. TOT40 will display Low Speed Caution if only Release 25 has been given for the West Leg.
Movements towards Brooklyn require release BKL22 from the ARTC Plains Controller. Movements from Brooklyn require release TOT22 from the ARTC Metro train controller. Broad gauge movements past TOT20 require a release from the VLine Brooklyn Loop train controller. The ARTC Metro train controller must obtain the release from the VLine Brooklyn Loop train controller for broad gauge trains before granting the release to the Plains train controller.
Diagrams 37/10 (West Footscray to Tottenham) and 47/10 (Sunshine) replaced 61/08 and 25/08 respectively. Operating Procedure 15A (Sunshine - Brooklyn - Newport) was updated. Operating Procedure 21 (Tottenham Gravitation Yard) was replaced by 21 (West Footscray - Tottenham - Brooklyn).
- 14.07.2010 **Brooklyn** (TON 462/10, WN 28)
On Wednesday, 14.7., Annett locked Points N (leading from No 3 Track to No 2 Track) were booked out of service and secured normal.

- 15.07.2010 **Bunyip** (TON 455/10, WN 28)
On Thursday, 15.7., Bunyip was reopened to passenger traffic. TON 325/10 is cancelled.
- 16.07.2010 **Dunolly** (SW 83/10, WN 28)
On Friday, 16.7., the signalling was restored to normal operation. The 5P keyswitches on the station platform, Points L and Points G were replaced by V5PSW keyswitches. SW 73/10 was cancelled.
- 17.07.2010 **Altona Junction - PRA Siding** (SW 166/10, WN 28)
On Saturday, 17.7., Points 217 leading to the PRA Refinery Siding were equipped with an M23A dual control point machine. The rodded connection to Derail 217 was removed and the derail is now worked directly by an M23A dual control point machine. Amend Diagrams 69/06 (Newport - Altona Junction) and 45/10 (Altona Junction - Laverton)
- 19.07.2010 **Newport - Newport Workshops** (SW 161/10, WN 27)
On Monday, 19.7., the following alterations took place as part of the Newport Workshops Stabling Sidings project. The Up end of the No 1 Workshops Lead was abolished and Points 614 and Dwarf NPT730 were removed. The lead to the Steamrail Sidings was abolished and Dwarf NPT728 was removed. Points 613 were equipped with an 84M type point machine but will remain out of service. The CCW points in the No 2 Workshops lead leading to the Gardens platform was converted to a WSA lever. A new turnout was installed in the Down Williamstown line and secured normal. The turnout is equipped with M23A point machines on a tangential turnout. A new turnout was installed on the Up side of Dwarf NPT732 and secured normal. The turnout is equipped with an 84M type point machine. Diagrams 71/10 (Newport to Williamstown), 69/10 (Newport to Altona Junction), and 73/10 (Newport Workshops North Yard) replaced 93/06, 69/06, and 85/06.
- (20.07.2010) **Ballarat** (SW 82/10, WN 28)
Diagram 34/10 (Ballarat) replaced 46/05 as in service.
- 22.07.2010 **Maryborough** (SW 86/10, 87/10, 88/10, & 89/10, WN 28 & 29)
A Train Stabling Siding was provided at the Down end. It leads from the Loco Depot Sidings (Fuel Point Road) between the main line points (Points 21) and Dwarf 22.
The Train Stabling Siding is 180 metres clear and is fenced. A manually operated gate is provided in the security fence across the siding.
The signalling of the siding has not been fully commissioned. The points providing access to siding are worked by a WSA lever. A derail is provided in the siding which is worked by a dual control point machine that is operated in the hand operating mode. A stop board is provided clear of the derail and gates for movements from the siding towards Home 20.
Dwarf 22 in the Fuel Point Road will be abolished and a stop board provided to control movements from the Fuel Point Road towards Home 20. The Derail at the exit of the Fuel Point Roads will also be operated in the hand operating mode.
Amend Diagram 142/07 (Maryborough). Operating Procedure 81 (Maryborough Locomotive Depot) was issued giving instructions as to the signalling of trains to and from the Stabling Siding and Fuel Point Roads.
- 23.07.2010 **Creswick** (SW 85/10, WN 28)
On Friday, 23.7., a Down two position Automatic signal was provided to protect Victoria St. The signal is located 20 metres beyond the end of the platform and is normally at proceed. A V5PSW keyswitch is provided at the Down end of the platform to operate the signal. If a train is delayed at the platform, the keyswitch can be operated to the Cancel position. This will restore the Automatic signal to Stop and, after a rundown period, cancel the operation of the level crossing equipment at Victoria St. When the train is ready to proceed, the keyswitch is to be placed in the Proceed position. This will start the level crossing equipment at Victoria, and shortly afterwards clear the Automatic signal.
- 23.07.2010 **Chiltern Loop - Wodonga Loop - Wodonga - Wodonga Coal Sidings - Albury**
On Friday, 23.7., the existing signalling between Chiltern Loop and Albury South will be taken out of use to commission the new Wodonga by-pass. The ATC section Chiltern Loop - Wodonga Junction will be established the same day.
- 25.07.2010 **North Melbourne** (SW 173/10, WN 29)
On Sunday, 25.7., Posts NME576 and NME474 were converted to tri-colour LEDs.
- 25.07.2010 **Creswick** (TON 489/10, WN 29)
On Sunday, 25.7., Creswick was opened as an unstaffed station. The 160 metre platform is situated on the Up side of the line on the Up side of Victoria St (opposite the former platform). The centre of the platform is at 174.563 km.
- 25.07.2010 **Brighton Beach** (SW 170/10, WN 29)
On Sunday, 25.7., No 1 Track and Sidings A and B were booked out of service for the Brighton Beach Stabling Sidings project.
- 26.07.2010 **Westall** (SW 156/10 & SW 157/10, WN 27)
On Monday, 26.7., Points 625 were provided in the Down line on the Down side of Wordsworth St pedestrian crossing. The points are equipped with an M23A point machine on a tangential turnout, and are secured normal. Automatic D633 was converted to an uncontrolled Home signal and equipped with an illuminated letter 'A'. A post phone was provided. Diagram 67/10 (Westall - Yarraman) replaced 63/10.

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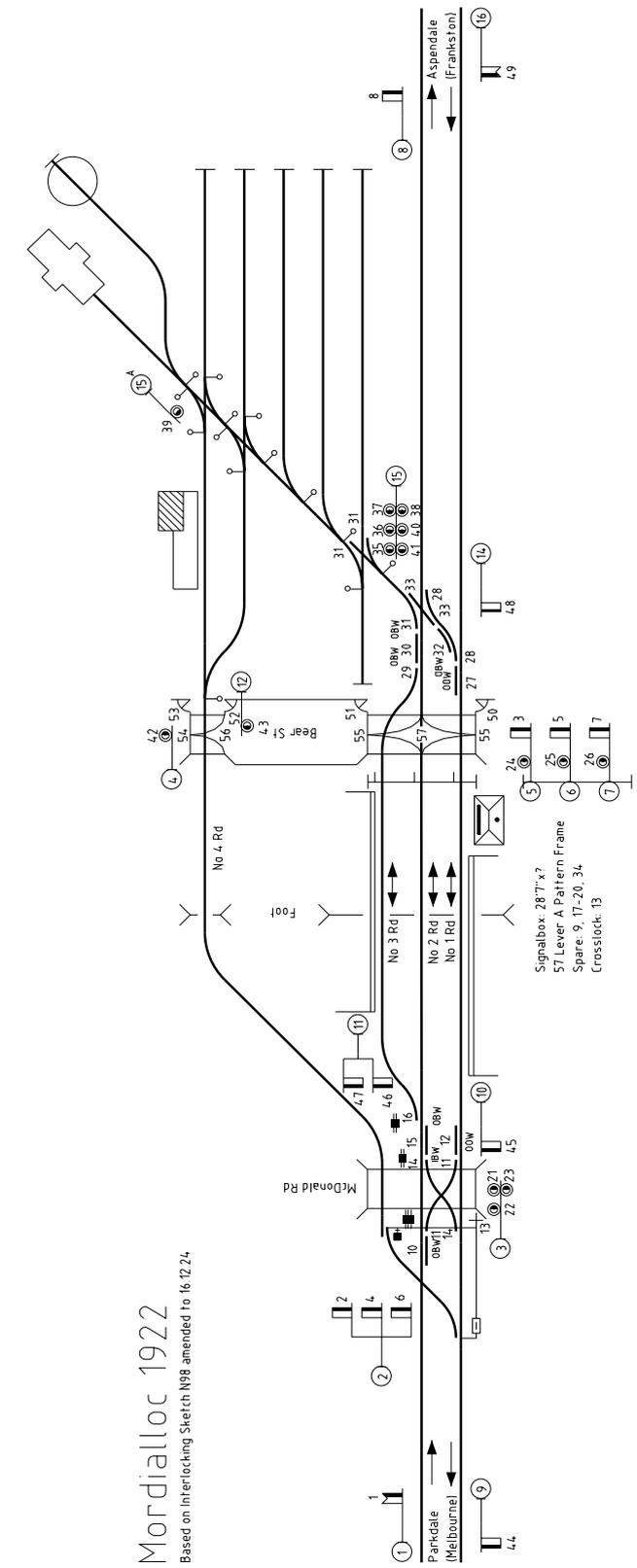
(Continued from Vol 33 No 4)

Electrification

Electrification brought only minor alterations at Mordialloc. The main change involved a rearrangement of the crossover from No 1 Road to the Down line and Goods Sidings at the Up end, and this was probably brought about by the replacement of the signal bridge by a new combined signal bridge and overhead power stanchion. On 17 November 1921 Crossover 28 was relocated 42 yards further out and the connection to the goods yard became a double compound. At the same time Post 13 was removed and five additional discs (35, 36, 37, 40 and 41) were provided on Post 15 to give separate shunting signals from the Goods Yard and the Down main line to Nos 1, 2 and 3 Roads. Post 14 was relocated 44 yards further out to suit the new position of the crossover. The old signal bridge was removed on 7 December 1921. The signals on Posts 5 and 6 were temporarily removed to a bracket Post 5 on the Down side of the line, and those on Post 7 were replaced by a lop bracket Post 7 on the Up side of the line, almost certainly behind the signalbox. On 2 June 1922 the temporary Posts 5 and 7 were removed and the signals moved to the new overhead stanchion at the Down end of the platforms. The use of an overhead stanchion as a signal bridge for mechanical signals was relatively rare in Victoria, but a similar bridge was provided at Frankston. At the other end of the yard,, Post 2 was moved 30 yards further out in late May 1922, probably for sighting reasons around the overhead stanchions. Subsequently, Post 14 was relocated 36 yards further out and 8 feet further from the line on 14 March 1924.

The first trial run of an electric train between Moorabbin and Mordialloc occurred on 19 May 1922 (curiously the WN did not inform everyone that the overhead had been made alive until late May). Electric trains commenced to run steam services on the steam timetable on 22 May 1922 and the full accelerated electric service between Melbourne and Mordialloc commenced on 6 June 1922. The first trial electric train between Mordialloc and Frankston ran on 21 August 1922, electric sets commenced to replace steam services as from 24 August, and the full accelerated electric service commenced on 27 August 1922. The 1928 General Appendix noted that all roads and crossovers were wired except for the Loco Shed and Coal Stage Roads (Turntable Road?), Public Siding (No 4 Road?), and the Up end dead end extension of No 1 Goods Siding (this list was, in fact, out of date as the dead end extension of No 1 Goods Siding had been wired in November 1927). In November 1929, in preparation for the working of the goods trains by electric locomotives, No 5 (Shed) Road, the Engine Road (the engine shed had probably been removed by this time), and part of the Turntable Road (to a terminating board) were wired.

The December 1924 timetable showed a massive improvement over the steam service. There were now 30 through trains (not including the Stony Point passenger trains), and 29 terminating services. Two suburban sets stabled at Mordialloc overnight. Three goods trains ran daily and all stopped for long periods at Mordialloc - the Down trains at 0540-0633, 0908-1015, and 1245-1410, and the Ups at 1155-1325, 1500-1546, and 2155-2328. By 1939 the number of through service had improved to 35, but the terminating services remained at 29. By this time the through steam goods trains had ceased to call, and Mordialloc was serviced by a daily goods hauled by an electric loco that arrived at 1100. On Mondays, Wednesdays, and Fridays, the



Mordialloc 1922

Based on Interlocking Sketch N98 amended to 16/12/24

goods was extended to Seaford and, on return from Seaford, shunted Mordialloc 1510-1542. On the other days the goods terminated at Mordialloc and returned to Melbourne at 1229. One curiosity was that a Frankston steam loco, as required, ran a goods from Frankston to Mordialloc and return

In July 1924 it was noted that the engine shed obscured the view between shunters and drivers and it was recom-

mended that it should be removed. On 9 October 1924 the Chief Engineer Way & Works recommended that it be removed to Colac for the broad gauge engines. It was probably removed as it is not shown on the 1925 diagram. However, the turntable was retained for at least another decade.

On 8 February 1925 the platforms were extended at the Up end to accommodate 7 car trains. To provide sufficient space, No 3 Road was extended to connect to the lead to No 4 Road and the diamond crossing over the Down main line was replaced by connections to both the Up and Down main lines. The new connections were now worked from the signalbox and the crosslocked lever was abolished. Disc

9 was provided on Post 2 to control moves from the Down main line to No 4 Road. Bracket Post 11 was replaced by a straight mast with Home 47 and a new Disc 20 to control moves from No 4 Road. The bottom left hand disc (Disc 21) on Post 3 was abolished, and a new Ground Disc 2B was provided to control set back moves along the Up main. Home 46 was replaced by a Ground Disc Post 11B (Disc 46).

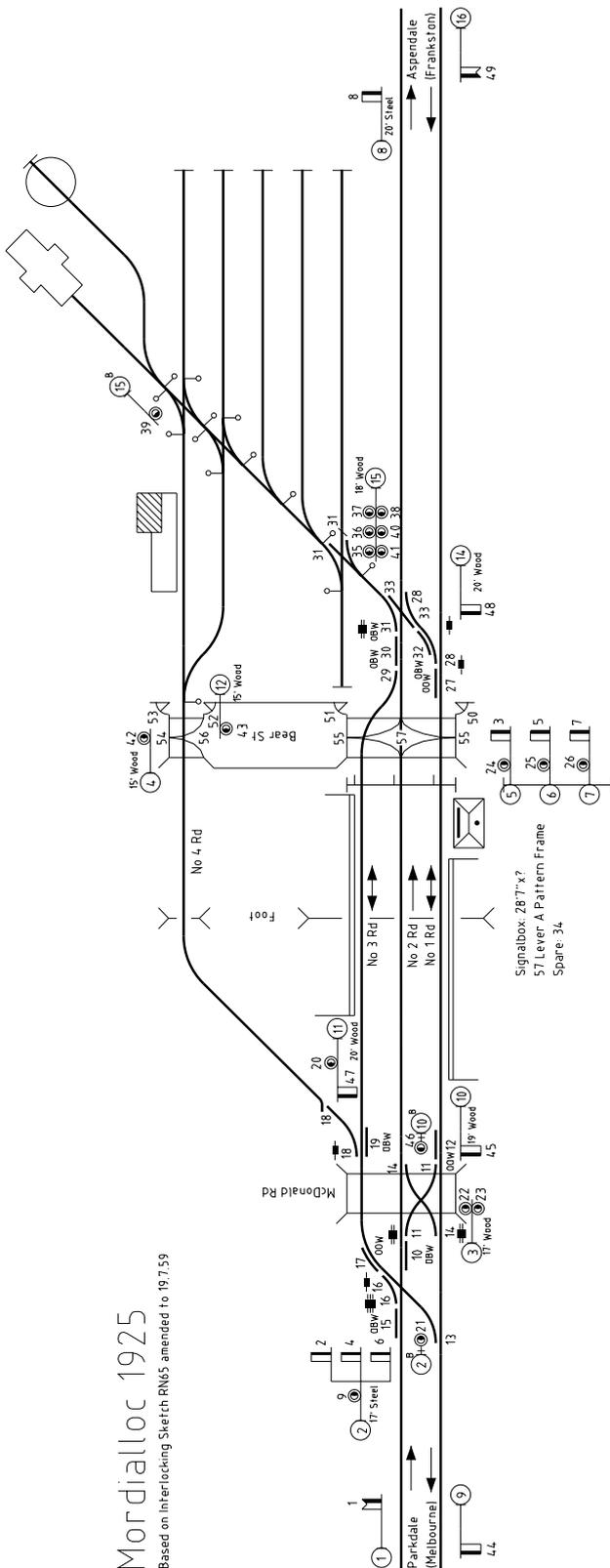
In April 1924 it was noted that the signalmen had difficulty in seeing the Down Distant signal on Post 1 during the day and it was suggested that the arm be lowered about 2 feet. In May the arm was lowered by three feet and while it was agreed that, while this removed the arm from the obstruction of the overhead cross beams, the background of trees still made the arm difficult to see in bright light. The arm could not be altered further and a repeater had been provided by the beginning of January 1926.

A wig wag was provided at Station Street (16 miles 71 chains) on 31 March 1926. Station Street is located on the Down side of the Mordialloc Creek bridge. It appears to have been the original Point Nepean Road, and was also known as 'Little' Point Nepean Rd. In March 1925 the SGTS noted that a wig wag had been recommended for the level crossing and stated that until it was provided, a police constable was to be provided to regulate traffic on race days or during other special traffic. Shortly before the wig wag was commissioned, the Chief Engineer of the Signals and Telegraphs noted that Down goods trains that shunted at Mordialloc stopped after passing the Down starting signal to do their brake test, and that this would cause the wig wag to operate excessively. He suggested providing a contact to stop the bell 30 feet on the approach side of the crossing and a notice board 20 feet from the level crossing. The contact was provided, but in April it was reported that the wig wag operated for 17 minutes while the goods stood beyond the contact. By late May a 'Limit of Shunt' board had been provided 20 feet from the crossing and drivers had been instructed to proceed to the board if it was necessary to pass the starting signal. In late June it was still noted that the wig wag was operating unnecessarily, but by October 1927 the situation was reported as being 'quite satisfactory'. The wig wag apparently did not resolve the need for a police presence during busy periods. In November 1932, for example, the police requested that a VR employe be placed in charge of Pt Nepean Road crossing during the Christmast holidays.

The AGST suggested that the wickets at McDonald St be controlled by a lever in March 1927. This was not agreed to as there was no one on duty after 8 pm to attend to the gates and wickets. Exactly what the problem was is not clear - presumably the wickets would have to be left locked along with the gate when unattended.

On 12 May 1927 Post 5 was relocated from the signalbridge to a ground mast on the opposite side of the line. This had been proposed by the S&T branch and the Traffic Branch had no objection provided the signal could be seen by Drivers when No 2 Road was occupied by a train. It appears the former signalbay was removed in late 1927 after the GST suggested its removal in September to improve the platform width (which varied from 11'3" to 15').

In November 1929 it was permitted, where specially authorised, for Drivers to shunt electric trains by reversing with the Guard at the rear looking out (previously the Driver always had to be at the leading end). At Mordialloc, this was permitted when terminating a Down train in No 3 Road. The crew were to change ends at the platform and then reverse the train onto the Down line clear of Post 15 and then drive forward into No 1 Road. In January 1930 it was also permitted to reverse the train from No 3 Road



Mordialloc 1925

Based on Interlocking Sketch RM65 amended to 1917.59

across McDonald St to the Up line and then drive forward into No 1 Road. To permit this, however, it had been necessary to provide bell communication with return ringing facilities to the gatekeeper at McDonald St. Before clearing the signals for the movement, the signalman had to send "Close gates for shunting operation" (3 long) and have it acknowledged. This was the less preferred option, and the Driver and Guard had to be advised each time it was necessary for this move to be performed.

On 6 August 1930 a special instruction was issued that when a Down train had been accepted and it was necessary to make a move from the Down end of the yard into No 2 Road, Crossover 14 had to be set for the Up main line prior to Discs 36 or 40 on Post 15 being cleared. The crossover had to remain reversed until the shunting movement had come to a stand at Ground Disc 10B or had passed onto the Up main line.

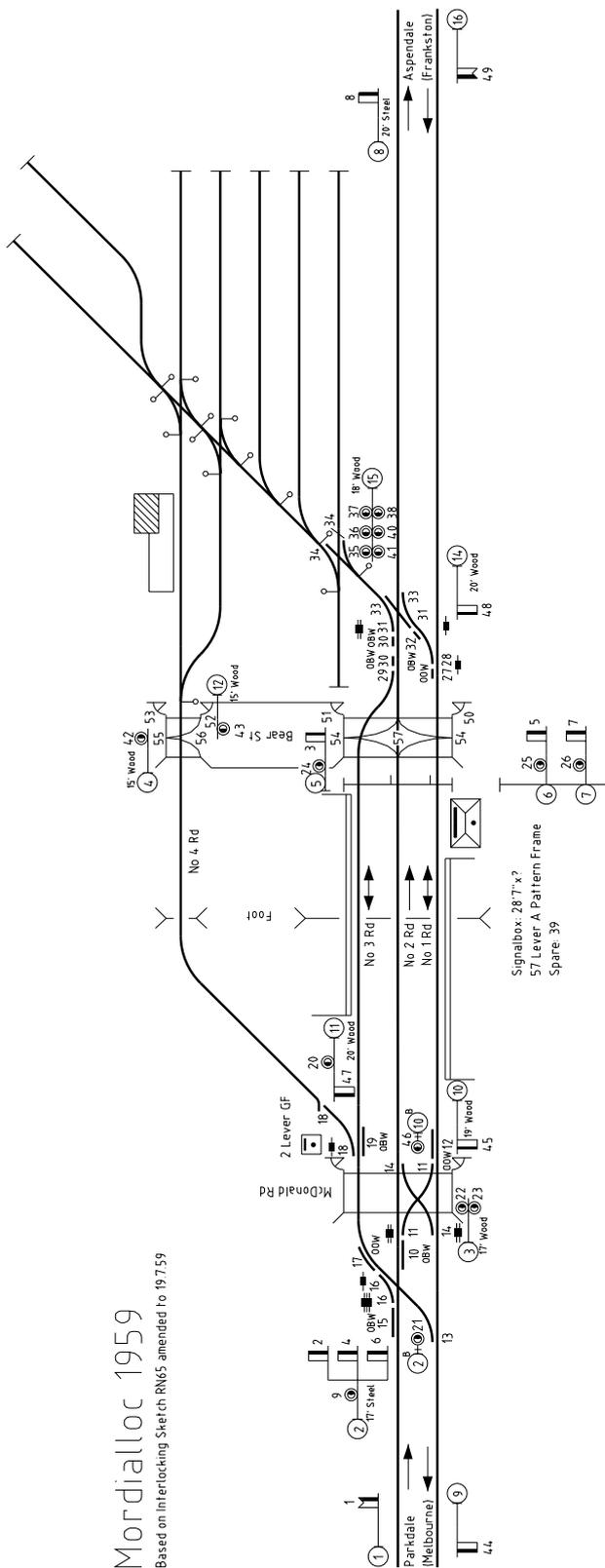
In 1936 there was a Betterment Board suggestion about the danger to the overhead from box kit advertisements flown at Mordialloc. The SM was instructed to report any dangerous flying.

Posts 5, 10, 14 and 16 were renewed in March and April 1938, and Post 11 was renewed in November 1938.

The grandstand at Epsom Racecourse burnt down in December 1938 and that was the end of racing there, although the track was retained as a training track until the late '90s. The 1935 'Standing instructions for the conduct of race traffic' gives a glimpse of working the race trains to Mordialloc. The race specials were formed by seven car sliding door (Tait) trains. They ran from Nos 10 and 11 East Platforms at Flinders Street and used, as far as possible, the Brighton Line between Flinders St E and South Yarra and the Through Line between South Yarra and Caulfield. All Down specials were to stop at Caulfield, and all Up specials at Glenhuntingly, Caulfield, and Richmond. On the Up journey they were to use the island platform at Caulfield to allow an easy transfer to the Up Oakleigh line services for those patrons heading for stations between Caulfield and South Yarra. The race trains had race discs attached and buffer symbol 9 (black '1' on an oval plate) over the righthand buffer and symbol 8 (two horizontal red lines on a round plate) over lefthand buffer. The last Up race train carried an extra white tail disc or light. Even given the extensive sidings at Mordialloc, the SM Mordialloc was allowed to run empty electric trains to Mentone for stabling. In addition to the punters, the racehorses had to be carried to the racecourse and back again. The horse special originated at Flemington Racecourse and loaded at Newmarket Stock Siding and other stations as required. Horses from Preston and Spencer St were to be picked up at Flinders Street. On the return journey, the horse special had to be marshalled Flinders Street box, Flemington boxes, Newmarket boxes, Caulfield boxes, AB car, and van. The engine had to run engine first and was required to turn at Mordialloc (it was probably for this reason that the turntable was retained at Mordialloc after electrification).

The wickets at McDonald St were controlled by levers as from 31 July 1940 and a two lever non interlocked ground frame was provided. As from 16 December 1940 the McDonald St gates were made privileged - that is, they could be shut and locked across the railway after the passage of the last train each evening. Previously it appears that they were closed across the railway from 0800 until 2000, and across the road outside these hours. In July 1941 instructions were issued that the signalling rodding and wires at McDonald St were to be covered with timber where the gatekeeper needed to step. In January 1942 the Chief Civil Engineer raised the issue of loiterers startling the gatekeepers at McDonald St (the gates were under the su-

pervision of the W&W branch, not the Traffic Branch) and asked if a special bell signal could be arranged to obtain assistance. This idea was rejected by the Block & Signal Inspectors as McDonald St was similar to many other gatehouses and the event was an isolated case. It was further felt that the signal would be of little value as the gatekeeper needed to leave the cabin to operate the gates and a person might then enter the cabin and the bell would not be accessible. Finally, it was considered that there would be (unspecified) complications with the signalman receiving the signal. Instead, the inspectors urged enclosing the



pedestrian walkway was provided on the Up side of the level crossing on 21 August 1987 when a further set of pedestrian barriers were commissioned. Controlled Automatic MOR700 was converted to a Home signal on 2 December 1987. The medium speed light was lowered to improve sighting and a telephone provided to Mordialloc signalbox.

The signalbox was demolished over the period 3 to 17 June 1988 and the materials were carted to the tip.

Few changes have occurred at Mordialloc in the twenty three years since the relay interlocking was installed.

Security fencing was provided around the stabling sidings in 1990. Dwarf MOR715 was relocated 12 metres in the Up direction on 15 March 1990, and indication lights for the security gates were provided on the panel on 19 July 1990. The position of the gates were not detected in the signal control circuits and the signallers were warned that it was quite possible to clear the signal with the gates in the closed position. The gates at this time were not motorised.

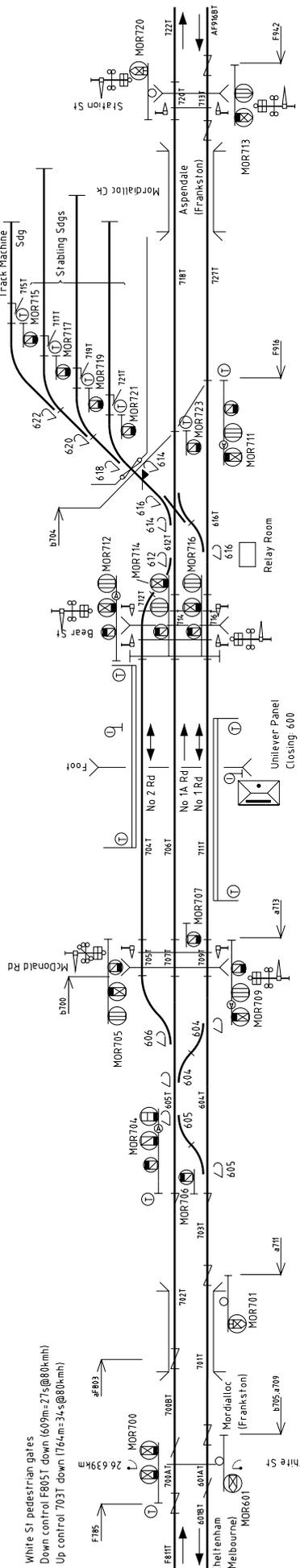
Pedestrian gates were provided at the White St pedestrian crossing (26.6397 km) on November 2005.

Acknowledgements

I would like to thank Des Jowett for supplying additional information about the history of Mordialloc. Details of the Mordialloc racecourses have been taken from 'They're Racing at Mordialloc' by Veronica Hahn, Kingston historical website, <http://localhistory.kingston.vic.gov.au/html/article/60.htm>. Electrification dates were taken from 'Electrification Dates, 1918-2007, Ross Willson, Newsrail May 2008 p142-3

Mordialloc 1987

Based on Signalling Arrangements Diagram RA151771/83R



White St pedestrian gates
 Down control F805T down (609m=27s@80km/h)
 Up control 703T down (1764m=34s@80km/h)

Station St
 Down stopping control for Nos 1 & 2 Pds, 6s after 612T or 66T down (25s), holding 14s after 704T or 711T down
 Down express control for No 1A Rd, 714T down (27s), holding 702T down (34s)
 Up control, holding
 Pine Court
 Down control: 5s after 718T down (25s@100km/h)
 Up control: (25s@100km/h)

Bear St
 Down Stopping Control for Nos 1 & 2 Rds: 704T down (33s); holding 9s after 702T down (30s)
 Down Control for No 1A Rd, 9s after 702T down (25s), holding 700BT down (30s)
 Up control: 723T down (26s), holding 6s after ? down (35s@95km/h)

McDonald St
 Down Control for No 1A 702T down (24s@80km/h), holding F811T down (35s@80km/h)
 Down Control for Nos 1 & 2 Rds: 10s after 702T down (25s), holding 13s after F811T down (35s)
 Up Stopping Control: 711T down (33s), holding 715T down (38s)
 Up Express Control: 10s after 723T down (25s), holding AF916A17 down (37s@95km/h)

When switched in, Mordialloc must select express or stopping prior to clearing MOR705, MOR709, MOR712, MOR 714, or MOR 716
 MOR704 & MOR711 interlocked with boom barriers if cleared with control or holding sections occupied and clearing delayed 7s if control occupied
 MOR704 & MOR714 interlocked with boom barriers and clear when train proved to rest and booms horizontal
 MOR712 interlocked with boom barriers if cleared with control or holding sections occupied
 MOR705, MOR714, & MOR716 interlocked with boom barriers
 MOR700 interlocked with pedestrian gates
 MOR706 is interlocked with boom barriers and will clear when booms are operating or up for 25s
 MOR707 is interlocked with boom barriers and will clear when booms are horizontal
 MOR715, 717, 719, 721, & 723 are interlocked with boom barriers and will clear when booms are operating

