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MINUTES OF MEETING HELD FRIDAY 19 NOVEMBER 2021, AT THE SURREY HILLS NEIGHBOURHOOD CENTRE, 1 BEDFORD AVENUE, SURREY HILLS, VICTORIA.

The SRSV meeting scheduled for Friday 19 November 2021 was held on site and was broadcast as an online meeting on the internet using the 'ZOOM' application.

Present: – (On site). Brett Cleak, Glenn Cumming, Graeme Dunn, Michael Foley, Peter Gerandt, Chris Gordon, Judy Gordon, Andrew Gostling, David Jones, Keith Lambert, David Langley, Roo Richards, Colin Rutledge, James Sinclair and Rod Smith. (15)

(Online). Ken Ashman, Noel Bamford, Phil Barker, Robert Bremner, Graeme Cleak, Michael Formaini, Graeme Henderson, Bill Johnston, Chris King, David Langberg, Neil Lewis, Andrew McLean, Bruce McLean, Andrew Pardy, Laurie Savage, Peter Silva, Bob Taaffe, and Andrew Wheatland. (18)

Apologies: – Brian Coleman, David Stosser and Stuart Turnbull.

Visitors: – James Finch and Jim Gordon.

The President, Mr. David Langley, took the chair and opened the meeting at 20:15 hours.

Minutes of the September 2021 Meeting: – Accepted as published. Bill Johnston / Graeme Dunn. Carried.

Business Arising: – Nil.

Correspondence: – Letter sent to Surrey Hills Neighbourhood Centre to book the meeting room for 2022. Rod Smith / Neil Lewis. Carried.

Reports: – Nil.

General Business: –

Rod Smith asked about services on the Lilydale Line. Chris Gordon advised that services on the Lilydale Line had resumed today after completion of the level crossing works.

Chris Gordon provided details about various projects in the Metropolitan District. A summary of the discussion follows: –

- The railway stations at Edithvale, Chelsea and Bonbeach will reopen on Monday 22 November 2021.

(Front cover) Down Automatic H433 is almost an anachronism in Melbourne. The signal is just over 50 years old, dating from November 1971 when the section between Mont Albert and Box Hill was resignalled for the triplication between East Camberwell and Box Hill. The signal is still a McKenzie & Holland K2 searchlight with incandescent bulbs. The controlling track circuits appear to be power frequency AC track circuits using vane relays, almost certainly the Westinghouse miniature relays. The tracks have been renewed with continuously welded rails on concrete sleepers. Glued insulated rail joints with modern impedance bonds have been provided. As can be seen, a few changes have occurred in the signal's 50 year life. Both the A and B lights have been lowered and moved to the right, the B light on a cantilever arm, to improve sighting. Nothing rail related in this photo is long for this world as the section between Surrey Hills and Mont Albert will be completely rebuilt shortly in consequence of the grade separations. The new signalling on this section is almost certain to be uncontrolled Home signals with LED heads. The signals will driven by a CBI and controlled by axle counters. Photo taken in December 2021. Photo David Langley

- The railway station at North Williamstown will reopen on Friday 10 December 2021 after the removal of the level crossing at Ferguson Street.
- Services on the Dandenong – Cranbourne duplication are planned to commence in February 2022.
- The level crossing at Webster Street Dandenong is expected to close.
- The level crossing removal at Glenroy Road, Glenroy, will be completed in March 2022.
- The occupation for level crossing removal works at Preston and Bell is planned for May 2022.
- The Greensborough – Montmorency duplication is planned for 2023.

Judy Gordon advised that the Holden Road level crossing on the Sunbury Line is expected to close.

Rod Smith noted that preliminary works for the level crossing removals at Union Road, Surrey Hills, and Mont Albert Road, Mont Albert, had commenced.

Chris Gordon advised that planning for the level crossing removals at Union Road, Surrey Hills, and Mont Albert Road, Mont Albert, included a proposal for a 90 day occupation with no stage works.

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

- There is an occupation on the Flinders Street – Cranbourne – Pakenham – Frankston lines this weekend.
- The line speed between Mordialloc – Carrum has been reduced from 95 km/h to 80 km/h because of changes to the signal spacing.
- A ten (10) day occupation between Flinders Street – Caulfield will be in force between Tuesday 14 December 2021 – Friday 24 December 2021.
- A nine (9) day occupation between Camberwell – Box Hill will be in force in late March 2022.

Keith Lambert also noted the commissioning of boom barriers at the Lydiard Street level crossing at Ballarat.

Rod Smith noted that construction of the new crossing loops at Boorcan and Murchison East was continuing.

Glenn Cumming asked about progress with the signalling at Ararat for the junction between the Maryborough Line and the Maroona Line. It was noted that there had not been any progress for many months and it is not known when this work will be completed.

Chris Gordon reported on the construction of a works siding at Victoria Park. This siding is expected to be commissioned as part of a nine day occupation in January 2022. The line speed through Clifton Hill will be lifted from 30 km/h to 40 km/h at the same time.

Phil Barker spoke about developments on the Carmichael (previously known as Adani) mine railway in central Queensland. The line is being constructed by Bravus. The CTC signalling system is not ready and it has been proposed to commence train operations using paper Train Orders. Phil noted that paper Train Orders had not been used in Queensland for 20 years. There are also delays in achieving accreditation for the commencement of rail operations.

Andrew Pardy asked if level crossing signs were manufactured in the VR Workshops. The answer provided was no because the signs are treated as road signs. Andrew also asked if Victoria had used cast iron crossing signs for level crossings. The answer provided was not in Victoria.

Ken Ashman advised that the Trentham NZ – Upper Hutt NZ resignalling had been commissioned on Monday 15 November 2021.

Ken Ashman noted that the resignalling at Pukekohe NZ is planned for completion in August 2022.

Graeme Henderson reported that the dive at Chatswood NSW had now been excavated. Graeme also described speed restrictions on the Up Main Line at Thornleigh NSW.

Chris King reported on the removal of signal boxes on the Strandfontien Line that runs North from Cape Town in South Africa.

Syllabus Item: – The President introduced Member Rod Smith to present the Syllabus Item.

Rod presented the 31st annual screening of slides from the collection of the late Stephen McLean.

This year's presentation commenced in January 1982 when Stephen travelled to Singapore and Malaysia.

The slides showed a variety of railway scenes, rollingstock and landscapes in Singapore and Malaysia.

Part way through the Syllabus Item, the slide projector suffered a mechanical failure which resulted in the slide show having to be terminated abruptly.

Attempts to recover the situation were unsuccessful and the decision was then taken to close the meeting
Meeting closed at 21:50 hours.

The next meeting will be on Friday 18 February, 2022 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 41/21 to WN 48/21, 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 alterations.

27.08.2021 Menzies Creek (A10/21)

On Friday, 27.8., the flashing lights at School Rd (at the station) were upgraded to boom barriers.

Four boom barriers were provided that completely close the level crossing when down (this is due to the arrangement of the roads around the crossing with the car park and Selby-Aura Rd intersecting with School Rd right at the crossing). The left hand (road approach) boom barriers will operate as normal. To allow time for road traffic to exit the level crossing, the right hand (road departure) boom barriers will commence their descent 2.5 seconds after the approach boom have commenced to descend. Vehicle detection loops are provided to detect vehicles on the crossing. If a vehicle is detected on the crossing, the departure booms will not lower (and will rise if they have commenced to descend). The departure booms will recommence to descend when the detection loops are clear. The vehicle detection is suppressed when the departure booms have fully lowered.

Extended approach track circuits have been provided in both platforms, and approach section indicator boards are provided to mark the start of the extended approaches. A yellow/green indicator for signal L1569 was provided on the wall of the relay room at the crossing. Magnetic detection devices to detect trolley movements past L1569 were provided near the toe of Points 11. A red Crossing Protection Indication was provided below the Down Crossing Protection signal. An 'A' light was provided on Post 7. The flashing lights were provided with 8" (200 mm) white LED units and are fitted with auto dimming circuitry.

If a Down train is occupying the extended approach when the Down Home at the end of the platform is cleared the yellow indicator on the relay room will light, and the green lamp for L1569 on the block shelf will commence to flash (the red lamp will stay lit). The crossing protection will start. Signal L1569 will remain at Stop until all four booms are fully lowered and the train has passed the Down Home signal (occupied the normal approach). When the booms are fully lowered the white Crossing Protection signals will start to flash. Once L1569 has cleared, the indicator on the wall of the relay room will change from yellow to green, and the block shelf indicator for L1569 will change to a steady green (the red will go out).

If the extended approach is unoccupied when the Down Home at the end of the platform is cleared, Signal L1569 will immediately clear, the green indicator on the wall of the relay room will illuminate, and the block shelf indicator will change from red to green. When the train enters the extended approach section the crossing will activate, and when the booms are fully lowered the white Crossing Protection Signals will start to flash. It is recommended that Down trains should stop short of the Approach Section Indication Board unless required by the length of the train or a requirement to take water.

When it is necessary to make a movement from No 3 Road, withdrawal of the Annett key from lever 7 and operating the 'clear' push button will cause the system to behave as if a Down train was occupying the extended approach. The Driver must not enter the level crossing until the booms have fully lowered, Signal L1569 is at clear, and the Crossing Protection Signals are displaying proceed.

If the flashing lights are operating with the Down approach track or extended approach track occupied and the pushbutton is pressed to restore Signal L1569 to Stop, the signal will immediately return to Stop. If only the extended approach track is occupied the booms will commence to rise immediately, but if approach track is occupied the booms will commence to rise after 20 seconds. The flashing lights will stop when the booms are fully up.

Whenever a boom barrier cycle has completed and the booms are fully up, there will be a minimum period of 25 seconds before a new cycle can commence.

If the crossing has timed out due an extended occupation (or fault) of the Down approach track while Signal L1569 is at proceed, the signal will be restored to stop and the Red Crossing Protection Indicator will light. The preferred procedure is to cancel L1569 using the push buttons as this will cancel the timeout function and the signal can be recleared normally.

Up movements remain generally unchanged. If a train enters the Up Approach track when a signal on Post 7 is at proceed, the Crossing Protection Signals will indicate proceed as soon as the flashing lights start. If the Up Approach track is occupied when a signal on Post 7 is called, the signal will remain at stop until the booms are horizontal. An 'A' light is provided on Post 7 and will illuminate if: the crossing has timed out; the line is clear to Post 2; lever 13 is reverse; and the Up Approach track is occupied (or failed) for at least 3 minutes. If the 'A' light illuminates the Down red Crossing Protection Signal will light.

- 13.10.2021 Bendigo** (SW 179/21, WN 42)
 On Wednesday, 13.10., No 3 Road in the Freight Yard was restored to use and the baulks at 161.737 km (Myrtle St bridge) were removed. A hand operated crossover leading from No 3 Road to No 4 Road in the Up direction was provided on the Down side of Myrtle St. The points of this crossover are worked by WSA levers and are temporarily secured for No 3 Road.
 The Down end of No 4 Road on the Down side of the Bio Wash building was renumber No 7 Road. The Down end of No 5 Road through the Bio Wash building to the baulks on the Down side of the Myrtle St bridge was renumbered No 8 Road.
 Note that Nos 2 & 3 Roads are available for use, as is the Up end 450 metres of No 4 Road. Nos 1, 4, & 5 Roads are booked out (TON 445/15). Nos 7 & 8 Roads are booked out with the points secured to lie for No 3 Road.
 Amend Diagram 26/21 (Bendigo).
- (19.10.2021) Cheltenham – Mordialloc** (SW 689/21, WN 42)
 Diagram 65/21 (Cheltenham – Mordialloc) replaced 43/21 (Cheltenham – Chelsea) due to the changes in SW 676/21
- 22.10.2021 Geelong** (SW 180/21, WN 42)
 On Friday, 22.10., the existing noticeboards in No 9 Road on each side of the walkways running between the Up end of the passenger platform and the Passenger Yard sidings were replaced by Stop boards. The boards are lettered "Stop/Obtain permission on channel 37N prior to proceeding". Permission to pass the Stop boards will be in accordance with Operating Procedure 61 (Geelong), Rule 6e.
 Amend Diagram 36/20 (Geelong).
- 25.10.2021 Bunyip** (SW 185/21, WN 43)
 On Monday, 25.10., the station access pedestrian crossing (79.200 km) was closed until further notice. The pedestrian gates and warning equipment will remain operational.
 Amend Diagram 98/18 (Nar Nar Goon – Drouin).
- (26.20.2021) Geelong** (SW 186/21, WN 43)
 Operating Procedure 61 (Geelong) was reissued due to the provision of the Stop boards on No 9 Road. SW 10/21 was cancelled.
- (26.10.2021) Mordialloc – Kananook** (SWP 8/21, WN 43)
 Commencing forthwith, Caulfield Group Operating Procedures 4, 5, 5A, & 6 were cancelled. New Operating Procedures 4 (Kananook – Carrum – Mordialloc, control of rail traffic movements), 5 (Mordialloc), and 6 (Kananook and Carrum) were issued
- 26.10.2021 Dandenong – Hallam** (SW 703/21, WN 43)
 Between Tuesday, 26.10., and Friday, 29.10., the former level crossing at South Gippsland Hwy (33.186 km) was abolished and the associated protection equipment will be removed. A new road overbridge was provided at 33.258 km. A new road/rail vehicle (RRV) access pad (DNG3) was provided at 33.187 km.
 Diagram 67/21 (Dandenong – Hallam) replaced 59/20.
 The TCMS and CBI data at Dandenong will not be updated until the final commissioning works for the Cranbourne duplication.
- (09.11.2021) Mordialloc** (SW 726/21, WN 45)
 Commencing forthwith the Signaller, Kananook, must not set through routes from Home MOR704 to the sidings at Mordialloc (via any of No 1, 1A, or 2 Tracks). Homes MOR712, MOR714, or MOR716 must not be called until the approaching Down train has been confirmed as stationary at the signal.
- 15.11.2021 Ballarat** (SW 194/21 & 203/21, WN 45 & 46)
 Between Saturday, 13.11., and Monday, 15.11., boom barriers were provided at Lydiard St (118.930 km) and the level crossing reopened to road traffic. The co-ordinated traffic lights were restored to use.
 The boom barriers will be operated from the existing controls on the Signalling VDU at Centrol, as will the pedestrian gates at Lydiard St. A healthy state indicator and yellow whistle boards were provided.
 The Ballarat Kingfisher was modified to provide a non-vital speed proving function (SPAD mitigation) for Down trains approaching Lydiard Street on either the Bacchus Marsh or Geelong lines. A timer will be started when a train is detected near Home 50 or 52 on the Down side of Humffray Street. If the speed of the approaching train is above the 'safe' stopping speed, a call will be placed on the co-ordinated traffic

lights at Lydiard Street and then the boom barriers will start. If this occurs an alarm will be generated on the Signalling VDU. The Signaller can cancel the SPAD mitigation once the train is clear of Points 39, and the Signaller has decided the approaching train is under control, by placing the level crossing control lever to the reverse position and then back to the normal position. This will cancel the operation of the level crossing.

The remnants of the interlocked gates were abolished and the gate stops were secured down. The open-shut control buttons and the emergency stop button on the Signalling VDU at Control were abolished.

Diagram 72/21 (Ballarat) replaced 16/21

19.11.2021 Mooroolbark – Lilydale (LXRA, SW 751/21, 787 & SWP 10/21, WN 46 & 49)

On Friday, 19.11., the line between Mooroolbark and Lilydale was restored to use.

New elevated stations were opened at Mooroolbark (34.490 km) and Lilydale (38.834 km). Both Mooroolbark and Lilydale are elevated island platforms 163 metres in length.

The Mooroolbark elevated section extends between 34.210 km and 34.595 km. The Lilydale elevated section extends from 38.735 km to 38.975 km. The locations of Manchester Rd & John St are unchanged at 34.247 km and 38.746 km respectively, but the Maroondah Hwy is now at 38.917 km. Manchester Rd and Maroondah Hwy have 5.4 metres clearance, but John St has only 4.8 metres.

A modified version of the Automatic and Track Control (ATC) system remains in force between Mooroolbark and Lilydale.

Mooroolbark

Automatic MLK261 was abolished. Homes MLK300, MLK301, MLK302, MLK303, & MLK304 were abolished. Crossover 201 and Points 202 were abolished. The Manchester Rd level crossing and its protection equipment was removed.

Homes MLK312, MLK313, MLK320, MLK321, MLK330, MLK332, & MLK351 were provided. Crossover 220 was provided (1:9 turnouts). Points 251 were provided (1:15 turnout). All turnouts are equipped with dual control point machines.

Intermediate (speed proving) train stops are provided in the Down line 31 metres on the Down side of Home MLK320 and in No 2 Platform 43 metres from the Down end of the platform.

Automatic H1005 will no longer display Reduce to Medium Speed. Automatic H1031 will no longer display Medium Speed Warning. Automatic H1036 was renumbered MLK213. Automatics H1171 & MLK268 were converted to LED lights.

Rail vehicle detection is by axle counters between 33.300 km (200 metres on the Up side of MLK312) to 35.980 km (Home MLK305).

The signalling at Mooroolbark can be placed into automatic mode. This mode must not be used in the event of a failure of signals or when track machines or road/rail vehicles are in use.

The station limits are from MLK312 (Down line) / MLK 213 (Up line) to MLK351.

Mooroolbark – Lilydale

Rail vehicle detection is by axle counters, except for the existing track circuits MLK268T, H291T, & J1171T between Mooroolbark and Lilydale.

The pedestrian crossing on the Down side of Cave Hill Rd was upgraded with pedestrian gates and magnetic latches.

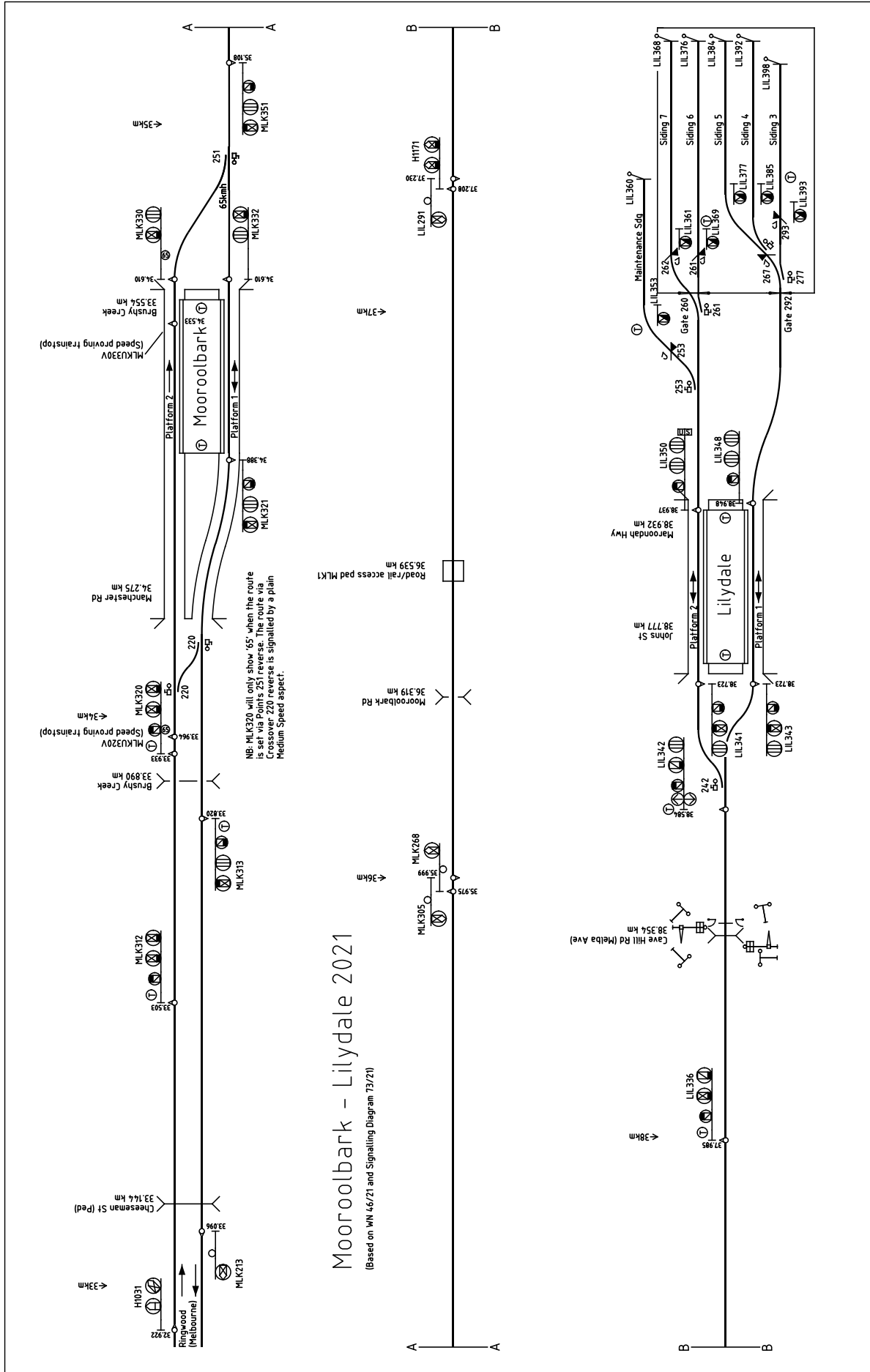
Lilydale

Automatics LIL300 & LIL301 were abolished. Homes LIL302, LIL303, LIL304, LIL305, & LIL306 were abolished. Dwarfs LIL307, LIL309, LIL315, LIL316, & LIL317 were abolished. The siding theatre indicator and associated signage was removed. Points 203, 207, 209, 210, 211, 213, & 215 were abolished. The Maroondah Hwy level crossing and its protection equipment was removed. The Parcels delivery access Crosslock and associated "A" pattern Annett key was removed. The Unit lever control panel was removed.

Homes LIL336, LIL341, LIL342, LIL343, LIL348, LIL350 were provided. Note that the route indicator on Home LIL350 will not be commissioned until further notice. Dwarfs LIL353, LIL361, LIL369, LIL377, LIL385, LIL393 were provided.

Points 242, 253, 261, 277, 293 were provided (turnouts 242 & 253 are 1:9, the others are 1:7.52). Derail & crowder 253, 261, 262, 276, 293 were provided. All points and derails except Points 242 are self-normalising. All turnouts are equipped with dual control point machines, and derail & crowders with electro-hydraulic point mechanisms. Points 272 are fitted with an M23A Mk3 point machine as a trial.

Motorised gates 260 and 292 were provided. Both gates are auto-normalising. These gates can be manually worked after being released by a 5P keyswitch located near the gates.



Intermediate (speed providing) train stops are provided in the single line 130 metres on the Down side of Home LIL336, and 76 metres on the Up side of Home LIL342.

Automatic LIL291 was converted to LED lights.

Home LIL336 is a controlled intermediate Home in the single line section. The signal cannot be cleared unless a route has been set from Mooroolbark to Lilydale and the section ahead of the signal is clear. If it is necessary for an Up train to return to Lilydale, the signal must not be used as authority for the movement. A Train Authority must be issued.

The signalling at Lilydale can be placed into automatic mode. This mode must not be used in the event of a failure of signals or when track machines or road/rail vehicles are in use.

Rail vehicle detection is by axle counters between 37.702 km (283 metres on the Up side of Home LIL336) and the buffers of the Lilydale sidings (39.625 km). The axle counters are configured with the following resets: supervisor (automatic); point supervisor (automatic); next train (manual requiring SMT attendance); occupation key (manual requiring SMT attendance); and full counting head control.

The station limits are from LIL342 to the buffers at the end of the line.

An emergency control panel was provided in the new station building at Lilydale. A keyswitch is provided at Ringwood to transfer control of the Mooroolbark and Lilydale interlockings to Lilydale. Control can only be transferred if the Smartlock CBI is communicating with the control system at Lilydale.

General

The signalling at Mooroolbark and Lilydale is operated from a RailView VDU at Ringwood signal box which controls a Smartlock CBI interlocking.

The axle counters are configured with the following resets: supervisor (automatic); point supervisor (automatic); next train (manual requiring SMT attendance); occupation key (manual requiring SMT attendance); and full counting head control. The points may be able to be moved even though the points show occupied. If the axle counter section appears to have failed, the Signaller will move the point key to the centre position and, if the points free indication illuminates, can call the points to the required position. Once a route is set over the failed track section the points will become route locked until the track section has been reset. Points and derails with an auto-normalising function will auto-normalise "once the axle counter system has diagnosed that the track section is clear".

Diagrams 75/21 (Ringwood East – Croydon) & 73/21 (Mooroolbark – Lilydale) replaced 9/21 & 55/21 respectively.

19.11.2021 Aspendale – Carrum (SW 750/21 & 756/21 & SWP 9/21, WN 46 & 47)

On Friday, 19.11., the line between Aspendale and Carrum was restored to use.

New stations were provided at Edithvale (31.465 km), Chelsea (33.533 km), and Bonbeach (34.959 km), each with 160 metre side platforms. New road overbridges were provided at Edithvale Rd (31.753 km), Thames Promenade (33.205 km), Argyle Ave (33.830 km), and Bondi Rd (34.703 km).

The pedestrian crossings at Lochiel Ave (31.212 km), Fraser Ave (32.085 km), Berry Ave (32.442 km), Swanpool Ave (32.830 km), Wellwood Rd (34.301 km), and The Glade (35.205 km) remain out of use due to delays in civil construction.

Homes ASP718, EDI730, EDI731, EDI734, EDI736, EDI739, EDI743, EDI746, EDI751, CSA752, CSA754, CSA755, CSA757, CSA760, CSA761, CSA772, CSA775, BON774, BON778, BON779 & BON779P, BON782, BON783, CAR719, CAR725, CAR784 were provided. All new signals are provided with TPWS.

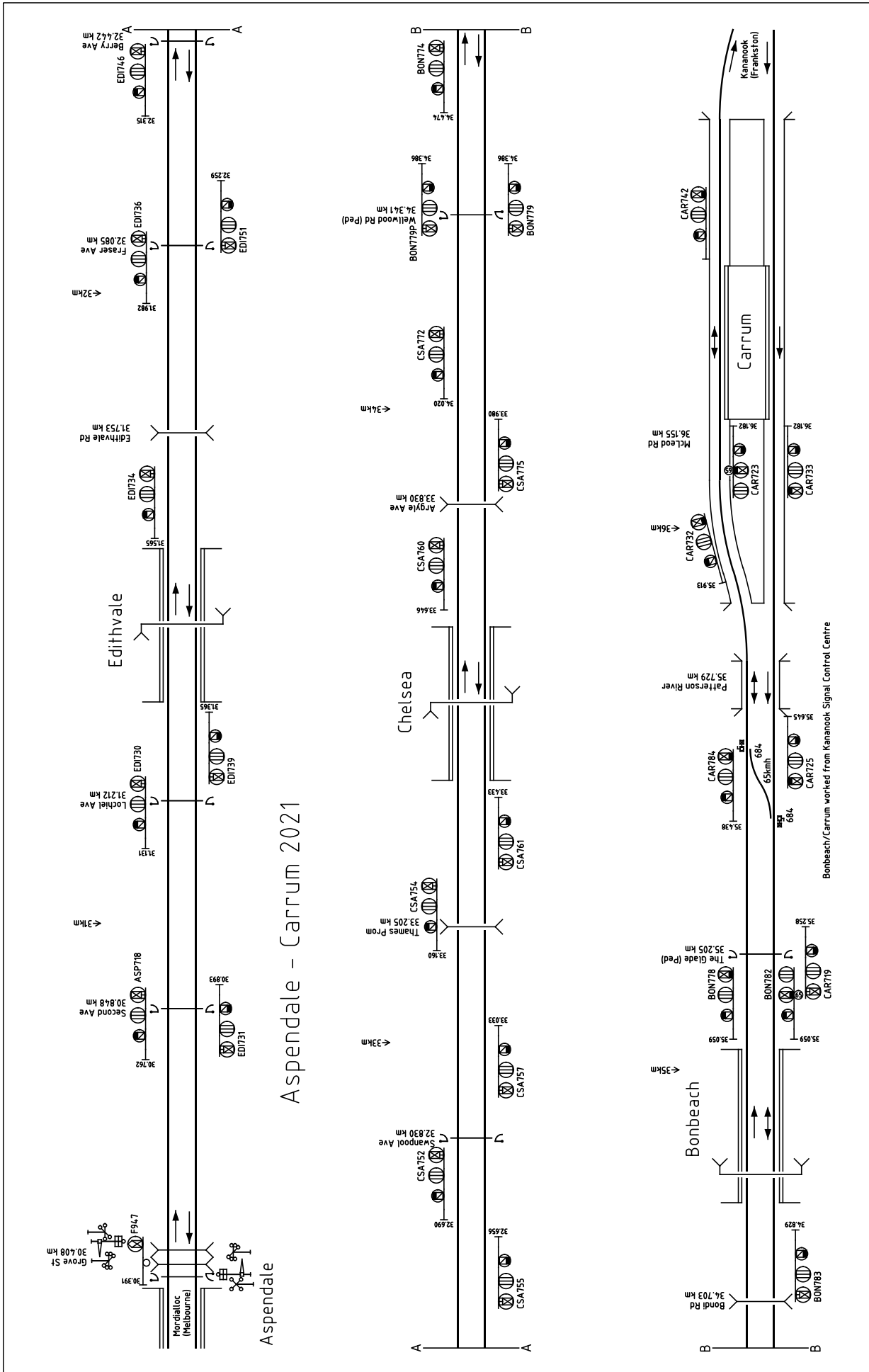
Crossover 684 on the Up side of Carrum was commissioned. This was provided as part of the Carrum grade separation (numbered 622) but never commissioned. The crossover has 1:15 turnouts and is fitted with Unistar in-bearer point machines. SW 89/20 is cancelled. The points may be operated manually in case of failure by an SMT, Signaller, or RIC Signaller Specialist.

Second Ave pedestrian crossing (30.857 km) was equipped with automatic pedestrian gates with electromagnetic latches.

Train detection is by axle counters commencing at Automatics ASP718 & EDI731 and extending to Kananook. Axle counter resets provided are: supervisor (automatic); point supervisor (automatic); next train (manual by SMT); occupation key (manual by SMT); and full counting head control. The points at Carrum & Kananook may be able to be moved even though the points show occupied. If the axle counter section appears to have failed, the Signaller will move the point key to the centre position and, if the points free indication illuminates, can call the points to the required position. Once a route is set over the failed track section the points will become route locked until the track section has been reset.

The defined station limits at Carrum are BON778 to CAR642 (Down line) and BON783 to CAR733 (Up line).

A road/rail access pad (EDI1) is provided on the Down side of Aspendale at 31.151 km.



The signalling is operated from a Smartlock 400 ViXL interlocking worked from Kananook Signal Control Centre.

Automatics F966, F967, F986, F991, F1004, F1009, F1024, F1035, F1044, F1059, F1067, F1070, F1088, & CAR633 were abolished. Banner indicator F1070BI was abolished. Down Home CAR722 was abolished.

Lochiel Ave and Swanpool Ave level crossings were closed and the level crossing protection equipment removed. Birdwood Ave passive pedestrian crossing was closed.

Diagrams 81/21 (Cheltenham – Chelsea) & 63/21 (Bonbeach – Frankston) replaced 65/21 & 45/21 respectively.

Caulfield Group Operating Procedures 4 & 6 were cancelled. New Operating Procedures 4 (Kananook – Carrum – Mordialloc, Control of Rail Traffic Movements) and 6 (Kananook and Carrum) were issued.

The interim safeworking arrangements (SW 89/20) are cancelled.

20.11.2021 Berriwillock (TON 563/21, WN 47)

On Saturday, 20.11., the Down end of No 2 Road was booked back into service following sleeper replacement. The baulks in No 2 Road at 400.920 km have been removed and the Down end points restored to use. TON 229/19 was cancelled.

21.11.2021 Southern Cross (SW 736/21, WN 46)

On Sunday, 21.11., Down Home 725 (Down Through Suburban Line) was equipped with TPWS.

22.11.2021 Epsom – Goornong (SW 204/21, WN 46)

Between Tuesday, 16.11., and Monday, 22.11., the following level crossings will be upgraded:

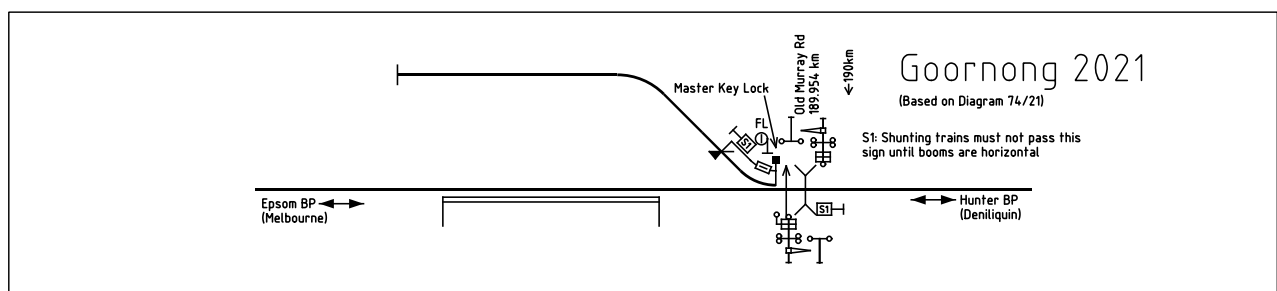
- Epsom: Howard St (169.811 km)
- Huntly: Wakeman Rd (176.631 km)
- Bagshot: Reilys Rd (180.773 km); Whirrakee Rd (182.383 km); Mulcairs Ln (185.666 km)
- Goornong: Mayreef Rd (187.161 km); Old Murray Rd (189.954 km)

At each level crossing the following alterations will occur:

- Axle counter approaches will be altered to allow for future line speed increases
- Health state light upgraded to LED
- V5PSW key switch for boom barrier disable function will be abolished
- Axle counter maintenance reset upgraded to meet requirements of NIAG-0304-02
- When a road/rail reset is carried out after on or off tracking, the active protection will continue to operate for 90 seconds after operation of the key switch.

22.11.2021 Goornong (SW 204/21, WN 46)

Between Tuesday, 16.11., and Monday, 22.11., the siding was shortened to 140 metres in length. The Up end points, master key lock, point lever, rodded connection, and derail/wheel crowder were abolished.



A three position key switch was provided at the Down end points to manually control the operation of the level crossing protection equipment at Old Murray Rd during shunting.

Notice boards lettered 'Shunting trains must not pass this sign until boom barriers are horizontal' were provided adjacent to the Down end derail/crowder and on the Down side of the level crossing

Amend Diagram 16/17 (North Bendigo – Elmore).

22.11.2021 Edithvale, Chelsea, Bonbeach (LXRA)

On Monday, 22.11., these three stations were reopened for passenger traffic.

(23.11.2021) Bacchus Marsh (TON 561/21, WN 47)

At the completion of works on the BLU project (SW 227/20), the Turntable Road was booked back into service. TON 176/18 is cancelled.

(23.11.2021) Mooroolbark – Lilydale (SW 764/21, WN 47)

Due to an issue with the RailView control panel the block light indications are not provided for the ATC Home Departure signals at Mooroolbark and Lilydale.

When a failure of the Home Departure signal occurs, the Signaller must check the track and signal indications to ensure there is no opposing train in the single line section and the track is clear to the next fixed signal.

The directional arrows indicating the direction the block is set are functional.

(23.11.2021) Lilydale (SW 760/21 & 757/21, WN 47)

Shunting beyond Home LIL342 from Platforms 1 & 2 is not permitted. This is due to the location of the axle counters and consequent continuous operation of Cave Hill Road level crossing.

If a train is required to shunt between platforms at Lilydale, the train must be signalled all the way through the section and shunted via Platform 1 at Mooroolbark.

The notice boards at the Up end of Platforms 1 & 2 for the 40 km/h speed restriction for Cave Hill Rd (SW 751/21) are no longer required and have been removed.

Amend Diagram 73/21.

(23.11.2021) Morwell (TON 554/21, WN 47)

Commencing forthwith the remnants of the Briquette Siding have been booked out of service for project works. The baulks at 144.700 km have been relocated 40 metres in the Up direction to the Down end of Points B. SW 197/05 is cancelled.

23.11.2021 Bendigo (SW 213/21, WN 48)

On Tuesday, 23.11., the hand operated crossover between Bendigo Freight Yard Nos 3 & 4 Roads on the Down side of Myrtle St was made available for use. Sleeper mounted signs showing the fouling points and road numbers have been provided at the fouling point of No 3 & No 4 Roads at Myrtle St, and at the Down end of No 3 Road.

To permit through movements using Nos 3 & 4 Roads, trains or vehicles are not to be stabled or left unattended on No 3 Road between Myrtle St and the Down end of No 3 Road unless approval has been granted.

The status of the yard roads is: Nos 2, 3, & 4 available for use; Nos 1, 5 & 6 booked out (TON 445/15); and Nos 7 & 8 booked out for construction work for the Bio Wash facility.

Amend Diagram 26/21 (Bendigo).

26.11.2021 Huntly (SW 216/21, WN 48)

On Friday, 26.11., construction of a 180 metre long platform has commenced between 176.404 km and 176.584 km on the Up side of Wakemans Rd.

Amend Diagram 16/17 (Epsom – Elmore).

26.11.2021 Goornong (SW 216/21, WN 48)

On Friday, 26.11., the new 100 metre long platform was completed. The platform extends between 176.404 km and 176.584 km (sic) on the Up side of Old Murray Rd.

Amend Diagram 16/17 (Epsom – Elmore).

29.11.2021 Bendigo (SW 219/21, WN 48)

On Monday, 29.11., Nos 7 & 8 Roads in the Bendigo Freight Yard were booked into service.

The hand points leading from No 7 Road to No 8 Road are provided with a hand locking bar to secure the points to lie for No 7 Road. A hand operated derail with a flag indicator is provided at the Down end fouling point of No 8 Road as lock-out protection for the Bio Wash Building.

The status of the yard roads is: Nos 2, 3, 4, 7, & 8 available for use, and Nos 1, 5, & 6 booked out (TON 445/15).

Amend Diagram 26/21 (Bendigo).

End£

DUNOLLY

(Continued from Vol 44 No 6 page 102)

CANAC

In the early 80's the Victorian government commissioned CANAC (the consulting arm of the Canadian National Railways) to review grain handling and transport in Victoria. Their report was handed to the government in 1984 and resulted in substantial changes to grain handling to reduce costs. On the grain side, the recommendation was to focus grain receipts in a smaller number of 'Central Receiving Points' – of which Dunolly was to be one. On the other hand, the consultants recommended closing both of the sub-terminals (Marmalake and Dunolly) to eliminate double handling of the grain; it is not clear if this recommendation was adopted. On the railway side, the changes were even more dramatic and resulted in fewer, larger, block grain trains shuttling between the CRPs and the export terminals. Crossing loops were rationalised and the remaining loops extended and converted to automatic operation. Train orders replaced electric staff working.

The harbinger of change around Dunolly was the closure of Bealiba as an Electric Staff station on 19 July 1987. The next staff station, Emu, was already equipped with switching instruments, and this facility was retained, with the short sections becoming Dunolly – Emu – St Arnaud, and the long section Dunolly – St Arnaud.

September 1988 marked the start of roughly 15 months of slow reconstruction of Dunolly. On the 28th of that month the Down Arrival Home (lever 7) was relocated 40 metres in the Down direction and to the left hand side of the track to allow construction of an extension to the crossing loop.

A non-trailable point machine replaced the W5a lever on the Down end points to Nos 3 & 4 Roads on 4 October 1988. The point machine was rodded to derails and wheel crowders in the sidings. A switch stand was provided that showed a large green diamond when the points were set and locked for No 2 Road and two red discs when the points were set for Nos 3 or 4 Roads. The connection at the Up end to No 3 Road was similarly treated on 13 October 1988, and it appears that the Up end connection to No 4 Road was removed at this time making that road a dead end.

The Up end of the yard was resignalled on 26 October 1988 in conjunction with the extension of the crossing loop. All of the existing mechanical signals, plunger locks, and Annett locks were removed. The crossing loop was extended to near Burnt Creek to give the maximum possible standing room between the bridge and Thompson St. The new Up end main line points were equipped with a trailable point machine normally set for the diverge into No 1 Road. Movements to and from No 1 Road were restricted to 40 km/h (the normal speed for a diverging move), while Up departure moves from No 2 Road, trailing though the points, were restricted to 65 km/h until the loco(s) had cleared the points.

A new connection to the GEB sidings was provided at the Up end allowing trains in the sidings to directly depart

to Geelong. All of the remaining points in Nos 1 & 2 Roads were provided with a non-trailable point machine rodded to rollout protection in the sidings and secured by F pattern (Fortress) Annett locks.

A new Down Home was provided 522 metres outside the new trailable points and could be worked from 5P keyswitches from either the platform or the trailable points. Operation of this signal was, in fact, similar to the former mechanical Home. When cleared from the platform, the signal detected the trailable points normal. When cleared from the points, the signal detected the points reverse for a move into No 2 Road, and the Signaller was required to display a green hand signal at the points.

F pattern Annett locks were provided on the quadrants working the Up Arrival Homes from the Mildura and Inglewood lines, both on the platform and at the Down end plunger locked points. In addition, the new trailable points were equipped with an E pattern Annett lock that prevented them from being manually reversed without the key. Duplicate E pattern locks were provided on the quadrants at the Down end plunger locked points working the Up Arrival Homes. This prevented trains from being signalled into No 2 Road from both ends at the same time.

On 13 February 1989 the Electric Staff system between Dunolly and Donald was replaced by Train Staff & Ticket with the section Dunolly – Emu. This only lasted for a short time as on 19 March 1989 Train Order Working was instituted between Dunolly and Mildura. The first train to be issued with a Train Order was No 9118 on Sunday 13 February. The single line section remained Dunolly – Emu. Commence and End Train order working boards were provided at Dunolly adjacent to the Up Home. Down passenger trains – the Vineland – could be issued with a Train Order at Maryborough to avoid having to stop the train at Dunolly. All passenger trains had to carry a Master Key and two (Nos 31 & 32) were provided at Maryborough lettered "Maryborough – Mildura for passenger trains". A further thirteen (Nos 33 to 45 and lettered 'Dunolly – Mildura') were provided for freight trains and distributed to Dunolly, Donald, Ouyen, and Mildura.

Flashing lights were provided on the Inglewood line at Broadway Street (the main road north) on 11 May 1989. Operation was automatic for all trains. A healthy state indicator was provided (a flashing white light), together with yellow whistle posts.

On 29 June 1989 the signalling at the Down end of the yard was altered in conjunction with the provision of flashing lights at Thompson Rd. A trailable point machine replaced the plunger lock on the Down end crossing loop points. The trailable points were set for No 2 Road and were secured by an F pattern Annett lock. The mechanical Up Arrival Homes on the bracket post were replaced by two light Home signals located further out. Post 3, for the Mildura line, was located on Down side of Tweedale St and could only be operated from the platform. Post 4, for the Inglewood line, was located on the Down side of Broadway Street, and was operated from the plunger

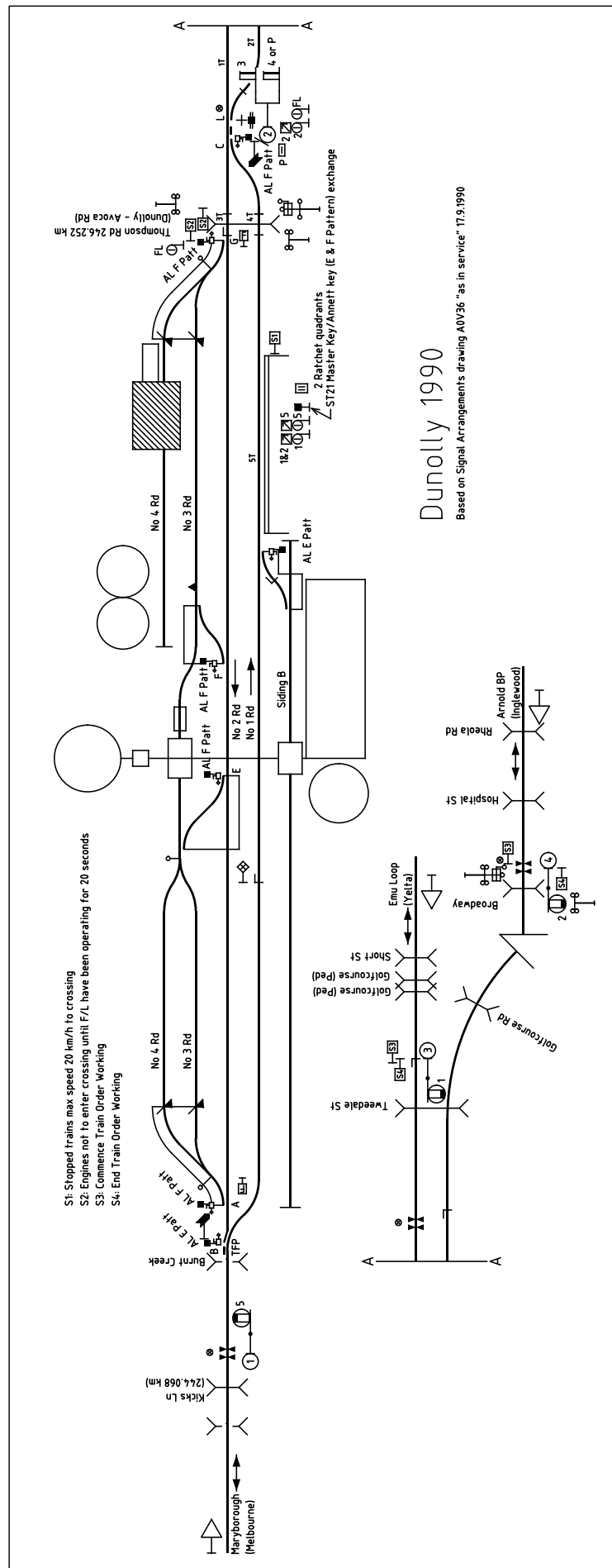
locked junction points. An Up location board was provided for the Inglewood line. A stop board was provided on the Inglewood line on the Down side of Rheola Rd, about 1.3 kilometres outside the Home. All trains had to stop at this board until instructed to pass it by the Signaller at Dunolly. (This board was not mentioned again, and it is not clear if it was not actually provided, or was removed with the successive relocations further out of the location board.)

The operation of the flashing lights at Thompson St were automatic for through movements, and manually controlled by 5P key switches for shunting movements. Key switches were provided on each side of the crossing and at the junction points. Healthy state indicators and yellow whistle posts were provided. Operation of the Thompson St level crossing was a bit obscure. The Signalling Arrangements show that conventional track circuits were provided, with an Approach Section Board in No 1 Road on the Up side of the platform. However, they also show a Harmon level crossing predictor, and a 20 km/h speed board for Down trains was provided at the Down end of the platform with no associated block joint. An ST21 to 'E' or 'F' Pattern Annett key exchange apparatus was provided on the platform, presumably provision for the future to allow Mildura line trains to shunt when Dunolly was unattended.

On 25 July 1989 Inglewood was closed as a Train Staff & Ticket station. The new Train Staff & Ticket section was Dunolly – Korong Vale – Bridgewater. Tickets were allowed to be used for trains between Dunolly and Korong Vale (and vice versa), but all trains to or from Bridgewater had to carry the Staff. Again, this only lasted a short time, and Train Orders were introduced on 21 August 1989 between Dunolly and Ultima, and between Eaglehawk and Inglewood and Korong Vale and Kulwin. Commence and End Train Order Working boards were provided at Dunolly adjacent to Post 4.

With the introduction of Train Orders, the section Dunolly – Inglewood – Korong Vale was officially considered to be the 'main line' with the Eaglehawk – Inglewood line becoming the branch.

TAILS was commissioned between Dunolly and Mildura on 3 November 1989 to provide automated detection of train complete. Two, and possibly three, TAILS installations were provided at Dunolly. The first was located at the Down Arrival Home (Post 1). The second was located on the



Mildura line just on the Down side of the junction. By September 1990 a third set was provided on the Inglewood line at the Up Arrival Home, Post 4. This was probably provided with the other two, and would have detected a Korong Vale train complete departing the Mildura line.

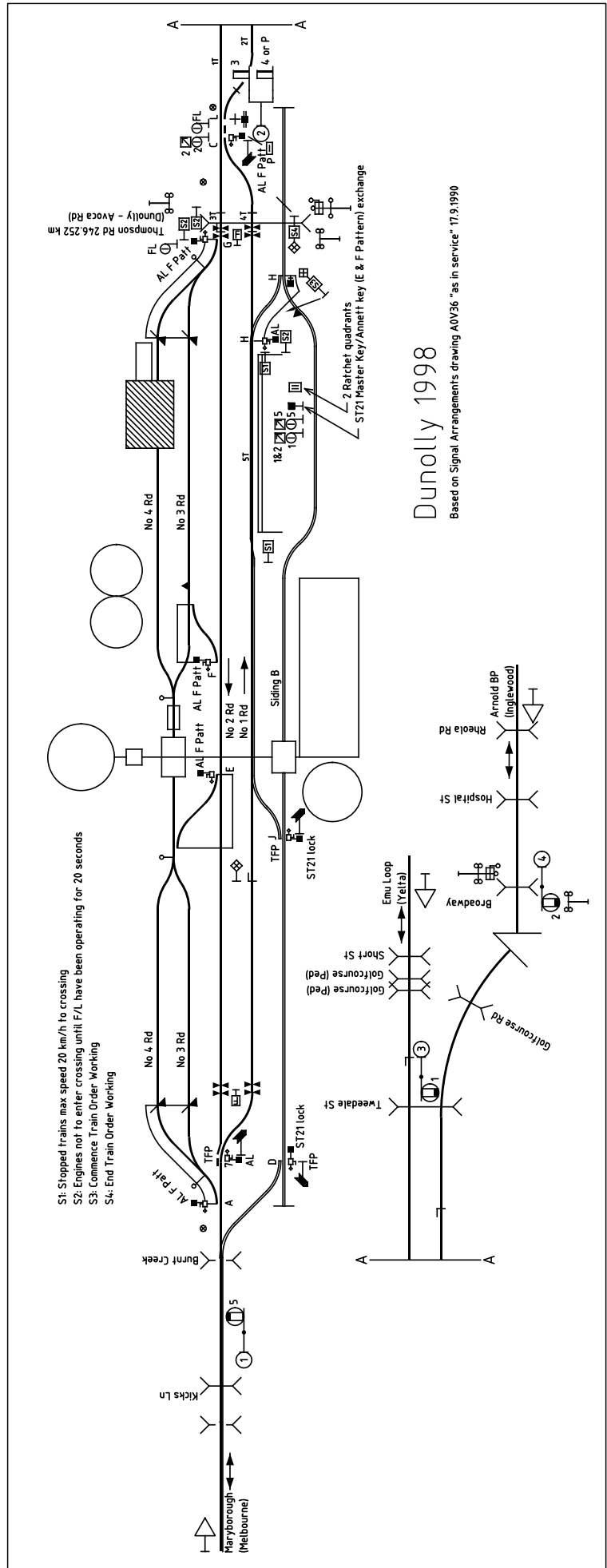
At this time Dunolly was still attended for all trains, and train movements between Maryborough and Dunolly were still controlled by miniature electric staff instruments. In mid October 1993 a Staff Exchange box was provided at Dunolly – a box with a hinged lid and secured by a V5PSW padlock. Permission was granted for two trains each day to work through Dunolly using the box.

On 19 December 1993 the permanent Signaller was withdrawn from Dunolly. The electric staff working between Maryborough and Dunolly was replaced by Train Order working. The Begin and End Train Order Working boards were relocated from Dunolly to Maryborough. The signals at Dunolly were normally at clear for movements on the Mildura line, and through Train Orders could be issued for Mildura line trains. A signaller had to attend Dunolly whenever movements were made to or from the Korong Vale line, or whenever it was necessary to shunt at Dunolly. All the Master Keys for the Dunolly – Mildura and Dunolly – Robinvale/Kulwin sections were withdrawn and replaced by keys lettered Maryborough - Mildura/Robinvale/Kulwin.

By the late 1990s No 4 Road had been connected at the Down end to the Grain Discharge pit track. The TAILS installations had been altered, being relocated to the fouling points of the crossing loops.

Arrival of the standard gauge

The standardisation of the main line between Melbourne and Adelaide resulted in considerable changes at Dunolly. Part of this project was the standardisation of the line between Maroona and Portland, which would cut broad gauge rail access to that port from the wheat growing areas in the north of the State. To solve this problem, the mothballed line from Ararat to Maryborough was converted to standard gauge and the line between Maryborough and Dunolly converted to dual gauge. Grain for Portland was then transhipped from broad to standard gauge at Dunolly. This required provision of standard gauge grain loading facilities at Dunolly. These were provided by converting Siding B to standard gauge, and providing a standard gauge run-around. Due to space limitations the run-around was provided by



constructing a standard gauge line behind the passenger platform to a head shunt north of Thompsons Road, and a short section of dual gauge track in No 1 Road.

Like the alterations a decade earlier, a lengthy sequence of alterations was required to provide the standard gauge facilities. The first provision was on 7 January 1996 when a fixed point turnout was installed in No 1 Track, probably the one at the Up end of the platform. On 10 January, Siding B was booked out for gauge conversion. On 14 January trailable points were installed at the Up end of Siding B, and in the middle of Siding B leading to No 1 Road. A gauge transfer was also provided at the same time in No 1 Road. On 21 January, trailable Points B at the Up end of the crossing loop (and the associated TAILS equipment) was relocated 90 metres in the Up direction to provide space for the future fixed turnout to the Siding B. On 4 February a set of dual gauge points were installed at the Down end of No 1 Road and rodded to a set of standard gauge points at the Down end of Siding B. The points were secured by an F pattern Annett lock, but were spiked normal. On 15 March 1996 a fixed turnout was provided at the Up end connecting Siding B to the dual gauge main line.

The dual gauge line from Maryborough was commissioned on 23 March 1996. At Dunolly the standard gauge diverged from the broad gauge at the Up end of the yard, near the Burnt Creek bridge. Here it connected to Siding B by a trailable point. These points allowed Down standard gauge trains to arrive into Siding B without stopping, but the points required to be manually unlocked and reversed for Up departures. Siding B was extended around the back of the passenger platform and station building to an engine release road on the Down side of Thompson Rd. A short section of dual gauge track was provided in No 1 Road to form a standard gauge run-around. The trailable points at the Up end of Siding B leading to the dual gauge line (Points D) and the standard gauge points leading to No 1 Road (Points J) were secured by ST21 Master Key locks. An ST21 Master Key was attached to each large Master Key for the Mildura corridor. Points D and J were fitted with point banners; when the points were set and locked normal two yellow discs were shown, and when unlocked and reversed a yellow fishtailed arrow was shown. The arrival Homes on Posts 1, 3, & 4 detected Points D and J normal. The points in the standard gauge crossover at the Down end of the yard leading to the engine release track (Points H) were secured by an F pattern Annett lock. A hand operated derail was provided in Siding B at the fouling point for Points H.

After provision of the standard gauge Dunolly continued to be attended by a Signaller for all broad and standard gauge shunting movements. The Signaller was issued with a corridor Master Key to allow Points D and J to be operated as required, so the value of attaching an ST21 Master Key was not immediately apparent.

Minor changes continued to be made. At the beginning of August 1996 a flag derail was provided in the standard gauge engine release road on the Down side of Thompson St. Commencing on 9 September 1996 the location boards

on the Geelong – Ballarat – Dunolly – Kulwin & Robinvale were relocated 2,000 metres out and the rear of each location board was fitted with an ETAS clearance point indicator. TAILS continued to be used on the Mildura corridor.

On 20 September 1996 an additional broad gauge GEB siding was provided. This dead end siding led from the Up side of the grain discharge pit. On the same day the broad gauge Annett locked crossover leading from No 2 to No 3 Road (Points F) was reversed so that the crossover now led from No 2 Road towards the broad gauge discharge point. It would appear that the other Annett locked crossover (Points E) had been similarly reversed on 18 February 1996.

Commencing on the 12 October 1996 the kilometre posts on the Down side of Dunolly on the Mildura line were altered to show the distance via North Geelong (an additional 37 kilometres). Each post continued to show the old distance prefixed by the letters 'ID'.

One curiosity was that the next two signalling diagrams, 30/96 and 38/96, showed the standard gauge grain loader erected over No 1 Road. This position was reflected in the instructions for working standard gauge trains at Dunolly issued in mid January 1997. Only one standard gauge train could work at Dunolly at one time, and standard gauge trains were limited to 20 vehicles. Dunolly had to be attended for the departure of all Up standard gauge trains (to work Points D), and for the arrival of all Down standard gauge trains that were required to cross Up broad gauge trains (probably to confirm the train was complete as the standard gauge train did not pass over the TAILS sensors). Standard gauge trains would arrive into Siding B and pull forward through Points J to the dual gauge No 1 Road. The Train Order was fulfilled once the train had arrived complete inside Points D. The locomotive was cut off, and the empty wagons were dropped through the loading facility into the Up end of Siding B. Once all the vehicles were loaded the loco drew the vehicles into the track behind the platform. The locomotive then ran around via No 1 Track and the vehicles were drawn back towards Points D where the brake test was conducted. Points D would be unlocked with an ST21 Annett key for the train to depart once a Train Order for the return journey to Maryborough had been obtained. However, photos from the early 2000s show the loader over Siding B. It is not known whether the loader was relocated, or whether the diagrams and instructions were wrong. By Diagram 40/06, issued by PacNat after a field survey, the 'Grain Discharge Pit' was shown over Siding B.

On 18 February 1997 minor circuit alterations took place. The Up Home (Post 3) would automatically reclear once a Down standard gauge train arrived into Siding B. The Up and Down Arrival Homes would not clear after the E or F pattern Annett keys were restored to the circuit controller on the platform until the signals were cleared from the platform key switches.

(To be continued)

1954 STANDARD LEVEL CROSSING SIGNS

Bob Taaffe has kindly supplied a copy of the May 1954 amendments to the 1946 SAA (Standards Association of Australia) Road Signs Code¹ covering 'Railway Level Crossing Signs'. In 1953 the Road Signs and Traffic Signals Sectional Committee was undertaking a complete revision of the Road Signs Code, but the section on level crossings was completed and published in advance of the remainder of the code "to enable the authorities to proceed with their programme of standardisation".

The amendment covered seven standard signs for use at level crossings; five will be described in these notes (the sixth, Type A, was a large red bat for gatekeeper's use which does not appear to have been used in Victoria, and the seventh, Type G, was the red disc used on gates.)

It is not to be thought that the signs were new to this amendment. Many, perhaps most, would have been in the original standard and may have been in use for years. I would suspect that the major revision for this issue might have been the addition of automatic half boom barriers, and possibly the use of reflective surfaces to the signs.

While the document gives the standard treatments, it states that local conditions may require supplementing "by other appropriate road signs and road markings", but that these additional signs and marking should comply, as far as practicable, with the accepted standards for shape, colouring, and location.

The committee divided level crossings into three classes:

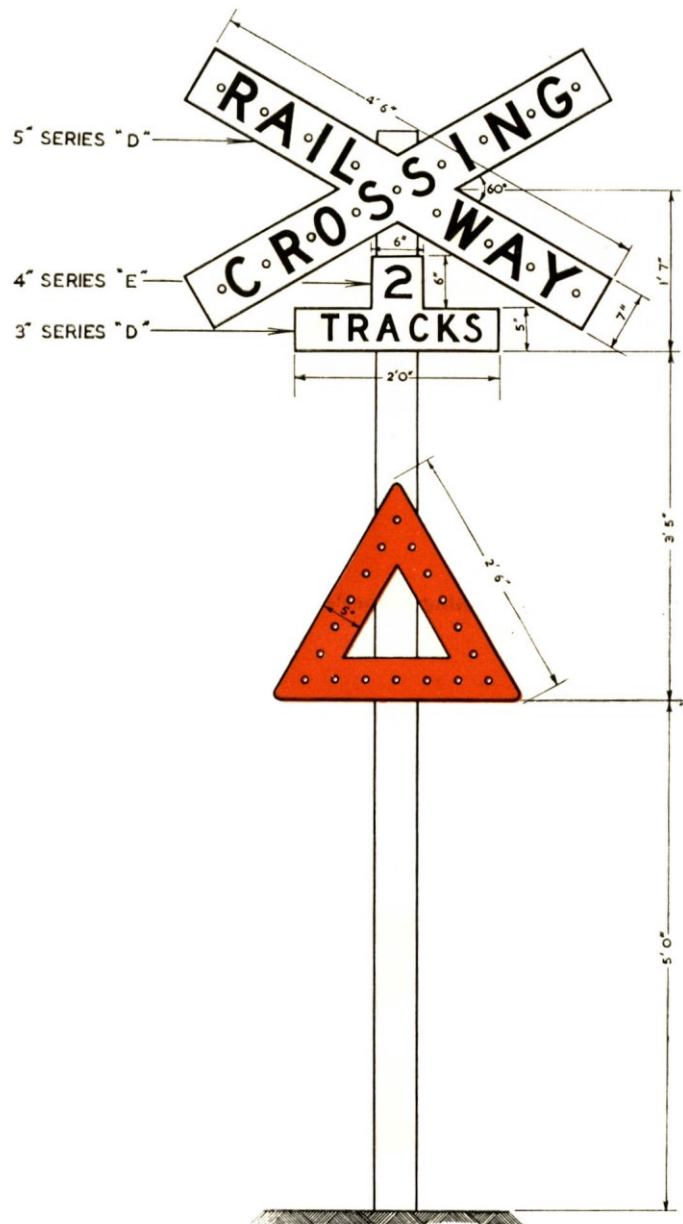
- Class 1 – Open crossings
- Class 2 – Crossings equipped with gates or boom gates (it appears that the committee meant manually operated booms that fully closed the road)
- Class 3 – Crossings equipped with automatic half boom barriers.

Type B – The railway crossing position sign

The Type B sign (right) was the 'Railway crossing position sign'. This sign was the standard level crossing sign and marked the location of the crossing to motorists. It was to be provided on both sides of all crossings unless a stop sign (Type D) or flashing lights (Type F) were provided.

The sign was to be erected at least 10 feet from the nearest rail, and normally on the left hand side of the road. If the approach to the crossing curved to the left, the sign could be placed on the right hand side of the line if this was more visible to the approaching traffic.

The sign consisted of a white diagonal cross with the words 'Railway Crossing' in black letters above the 'standard red triangle'. The sign showing the number of



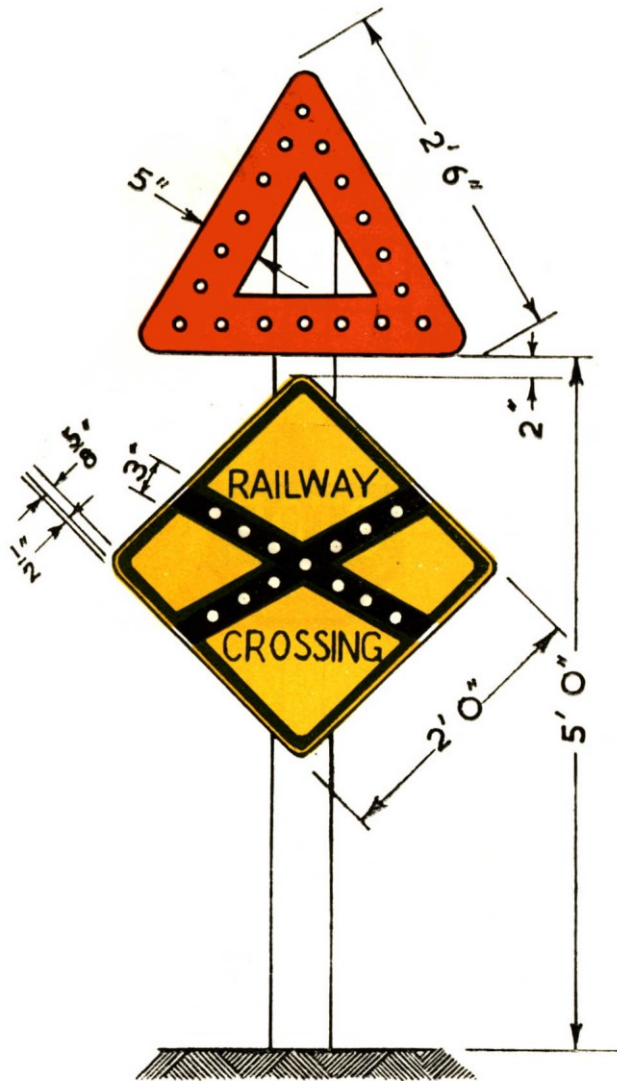
tracks was optional, but where provided was of black letters on a white background placed immediately below the cross.

The cross arms had to be covered with reflecting material, or equipped with nine 'retro-reflectors' of at least 7/8 inch diameter (this was the standard diameter of all the retro-reflectors in the standard).

The triangle was to colour BS 381C Signal Red (Colour 537), and had to be equipped with 18 white retro-reflectors.

The post, of course, was painted white.

¹ Formally known as AS CE.1-1946, Australian Standard Rules for the Design, Location, Erection and Use of Signs for the Guidance of Road Traffic.



Type C – The railway crossing warning sign

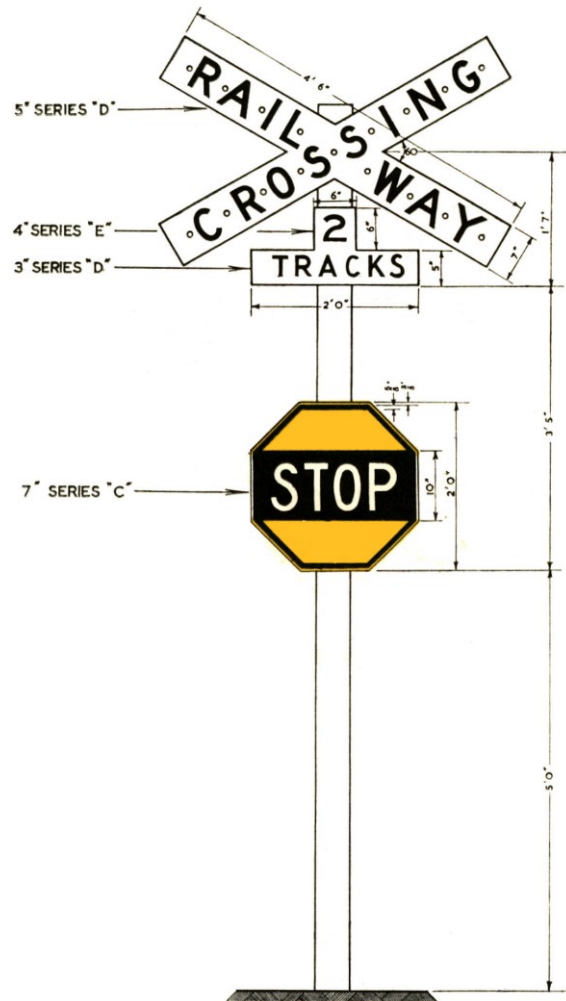
The Type C sign (above left) was the 'Railway crossing warning sign'. This could be used on the approach to any level crossing where approaching motorist could not see the sign at the crossing, or crossing at all, for at least 300 feet. It could also be erected at other crossings if the road authority thought it necessary.

Where provided it was erected between 300 and 650 feet in advance of the crossing. In built up areas less than 300 feet could be adopted. The sign would normally be placed on the left hand side of the road, but where the approach road curves to the left an additional warning sign could be placed on the right hand side of the road.

The warning sign consisted of a standard red triangle over a yellow diamond shaped warning sign.

The red triangle was identical to that on the railway crossing position sign, including the reflective treatment.

The yellow warning sign had a black diagonal cross and the words "Railway Crossing" in black letters. The yellow background was to BS381C "Golden Yellow" (Colour 356). Either the yellow background was to be reflective, or each arm of the black cross was to be fitted with seven white retro-reflectors.



Type D – Railway crossing stop sign

The Type D sign (above right) was the 'Railway crossing stop sign'. This could be provided at open crossings instead of the Type B (Railway crossing position sign) where it was considered that road vehicles should be required to stop before passing over the crossing (e.g. because of restricted visibility).

It was allowed to erect the Stop sign on only one of the road approaches to the crossing (i.e. that motorists were only required to stop in one direction). In this case a Type B sign was erected on the other side of the crossing.

Like the Type B sign, it was erected on the left hand side of the road and at least 10 feet from the nearest rail. In addition the standard specifically cautions that, the sign should be erected as close as possible to the point at which motorists were required to stop to get a clear view of any approaching rail traffic.

Where local conditions required, an additional Type D sign could be erected on the right hand side of the road, or a "standard stop sign or signs" could be provided as close as practicable to the point at which the motorist was required to stop.

The Railway crossing stop sign consisted of a standard crossbuck over a "standard octagonal-shaped stop sign". By this I assume that the yellow octagonal sign was the standard stop sign used generally at intersections. The yellow background was to BS381C "Golden Yellow"

(Colour 356), and the sign was to have 'beaded retro-reflecting material' or the word 'Stop' in retro-reflectors.

A sign showing the number of tracks to be crossed could be provided.

Type E – The railway crossing approach (supplementary) sign

The Type E sign (top right) was the 'Railway crossing approach (supplementary) sign'. This could be provided, where necessary, between the Railway crossing warning sign (Type C) and a Railway crossing stop sign (Type D) or a set of flashing lights (Type F). It could not be provided on the approach to a set of gates or booms unless they were also equipped with a set of flashing lights (with the 'Stop on red signal sign').

When providing a supplementary sign, "regard should be paid to any obstruction of view due to horizontal or vertical curvature of the road, parked vehicles, or foliage, and to the permitted speed". It had to be placed on the left hand side of the road, although a duplicate sign could be provided on the right hand side of the road.

The sign was to have 'beaded retro-reflecting material' or four white retro-reflectors, one at each corner of the plate.

Type F – The railway crossing flashing-light sign

The NSW railways routinely calls flashing light masts 'Type F signals'; this is why. The standard does not reference the flashing lights or bells, only the other signs on the post.

Flashing lights (bottom right) were normally provided at open crossings or crossings equipped with half boom barriers. They could also be provided, at the discretion of the erecting authority, at gated or full boom crossings.

The flashing light mast, in general, was erected on the left hand side of the road and at least 10 feet from the nearest rail. Again, if the approach road curved to the left the mast could be erected on the right hand side of the road (I'm not aware of any location in Victoria where the mast was only erected on the right hand side.)

Wherever practical, double lines were to marked on the road on each approach to a crossing with half boom gates, and the lines extended across the railway tracks.

The stop sign had white letters on a black ground. It was to have beaded retro-reflecting material, or four white retro-reflectors, one at each corner of the sign.

The standard crossbuck was provided, together with an option number of tracks.

