

# SOMERSAULT

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SIGNALLING RECORD SOCIETY OF VICTORIA INC



*It has been a while since we featured a somersault signal on the cover of Somersault. The Down Home signal at Bealiba is shown in June 2002. Bealiba is a plunger locked intermediate siding in the Dunolly - Emu Loop Train Order section. Until 1987 Bealiba was a Staff station with the sections Dunolly - Bealiba - Emu, but in that year the crossing loop at Emu was extended and Bealiba was closed as a Staff station. The siding at Bealiba is retained to serve silos, but the plunger locking will probably be removed as part of the standardisation of the Mildura line. Plunger locked points - and mechanical Home signals - are becoming uncommon in Victoria. On the Mildura line there are only four examples with both main line points plunger locked: Bealiba, St Arnaud, Hattah, and Irymple; all are former Staff stations reduced to intermediate sidings. A further two stations have one plunger lock each: Dunolly (on the junction points) and Ouyen (on the Up end main line points).*

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## MINUTES OF MEETING HELD FRIDAY JULY 19, 2002,

AT THE SURREY HILLS NEIGHBOURHOOD CENTRE, 1 BEDFORD AVENUE, SURREY HILLS

Present: - N.Bamford, J.Black, W.Brook, B.Cleak, G.Cleak, G.Cumming, C.Gordon, C.Haber, W.Johnston, K.Lambert, D.Langley, S.Malpass, B.McCurry, J.McLean, T.Murray, T.Penn, L.Savage, B.Sherry, P.Silva, R.Smith, A.Wheatland & R.Whitehead.

Apologies: - R.Bremner, G.Candy, I.Chan, A.Hinde, I.Michaelson, G.O'Flynn & C.Rutledge.

Visitors: - J.Gordon.

The President, Mr. David Langley, took the chair & opened the meeting @ 20:04 hours.

Minutes of the May 2002 Meeting: - Accepted as published. S.Malpass / W.Johnston. Carried.

Business Arising: - The date of 1989 in the item regarding the Alberton Line should have read 1892.

Correspondence: - An order for the next volume of the UK book was sent to the NRM in York.

A letter of thanks was sent to John Hearsch for the syllabus item at the last meeting & for the donation to the SRSV of a quantity of documentation.

A letter of thanks was sent to the ARE for the donation of a quantity of documentation.

A letter was sent to Frank Tybislowski welcoming him as a member of the SRSV.

A letter was sent to John Blakebrough welcoming him as a member of the SRSV.

A letter was received from member Jim Black drawing attention to a recent paper published by the IRSE & suggesting that it might be suitable for publication in Somersault.

An email was sent to the IRSE requesting permission to publish the IRSE paper in Somersault.

A copy of a letter sent to the VRI concerning the History of the Victorian Railways was tabled.

Tom Murray tabled circular WC.02/172 for the Swing Door Electric Tour tomorrow was tabled.

Bob Whitehead tabled a letter from Ronald Greenaway. He seeks a good photograph of the Market Street Signal Bridge in order to create an oil painting of the Signal Bridge. Can anybody assist?

W.Johnston / A.Wheatland. Carried.

Reports: - Tours. Glenn Cumming brought the meeting up to date with the arrangements for the proposed Signal Box Tour to be held on Monday 23 September 2002. Any comments or questions are to be directed to Glenn Cumming.

Archives. Bob Whitehead spoke about the donations of material from John Hearsch & the ARE. Bob noted that a working bee would be held this Sunday to clear out rubbish in preparation for the next stage of work.

General Business: - Keith Lambert advised the meeting that the Jolimont - Victoria Park re - signalling was commissioned on Sunday 23.06.2002.

Keith Lambert noted that only the brickwork of Flinders Street "A" Box remains following the recent fire.

Keith Lambert reported that LED signals would replace Style "R" signals between Boronia - Fern Tree Gully and Rosanna - Macleod in the near future.

David Langley reported on the provision of LED light units on semaphore signals at Broadford & Shepparton.

Andrew Wheatland noted that white LED units were in use on semaphore signals at Puffing Billy.

Bill Johnston reported that signal M322 at Tottenham had recently been converted to LED.

Keith Lambert reported on the provision of a pedestrian level crossing at the site of the former level crossing (not the former site of the level crossing) at Westall. The crossing is 2 metres wide and requires 2

pedestrian swing gates on either side of the railway tracks.

Bob Whitehead noted that General Motors Railway Station closes for all business next Friday.

Laurie Savage asked if LED signals are equipped with dimming circuits? The answer was not known.

Laurie Savage reported that the Up Outer Home Signal at North Geelong "B" Box has been fitted with reflectorised strips on the arm.

Laurie Savage noted that the electric locks & Repeating Signals at Inverleigh are now in service.

Craig Haber noted that the Repeating Signals at Inverleigh & Westmere are track circuited while the Repeating Signals at CRT Siding & SCT Siding are not.

Laurie Savage noted that a new style of temporary speed restriction warning boards had been seen on the ARTC lines.

David Langley asked how many of the new grain balloon loops / sidings had been commissioned. The answer was not known.

Rod Smith noted that with the commissioning of Maroona, two automatic signals were converted to Repeating Signals at short notice.

Brett Cleak reported on progress at North Geelong "C" Box for the SG connections to the grain loop. Commissioning is expected to occur in August 2002.

Brett Cleak advised that work continues between Laverton & Gheringhap for the installation of power signalling.

Rod Smith spoke about the recent collision at Epping. Discussion ensued concerning the events surrounding this incident.

Rod Smith noted that the new "Xtrapolis" trains would be fitted with AC traction motors & asked if there would be any adverse effects on track circuits.

Tom Murray asked what was a Style "R" signal. A detailed answer was provided.

Tom Murray asked what was the cause of the fire at Flinders Street "A" Box. The answer was not known.

Tom Murray reported on the recent collision at Hexham in New South Wales & asked if the 2 trains involved were carrying different radios.

Keith Lambert reported that the Keon Park control panel was used recently when the remote control from Epping failed.

Craig Haber noted that it was possible to get a Clear Medium Speed aspect to enter the siding at Maribyrnong River Junction. Discussion on the methods of working this line / siding over the years took place.

Bob Whitehead asked about progress on the West Swanston Dock & Webb Dock Lines.

Bob Whitehead reported that the memoirs of former Block & Signal Inspector Fred Gall are in the process of being published.

Syllabus Item: - The President introduced member Keith Lambert to present the Syllabus Item, but before Keith could get started, Tom Murray hijacked the slide projector & showed 10 slides taken by him on a trip on the Camden Line in New South Wales.

Keith presented a collection of 27 slides from Victoria in the form of a "Where is it?" type quiz. 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.

David Langley achieved a perfect score and we are pleased to advise that this year Keith Lambert also achieved a perfect score from his own slides. A couple of other members scored 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 @ 22:10 hours.

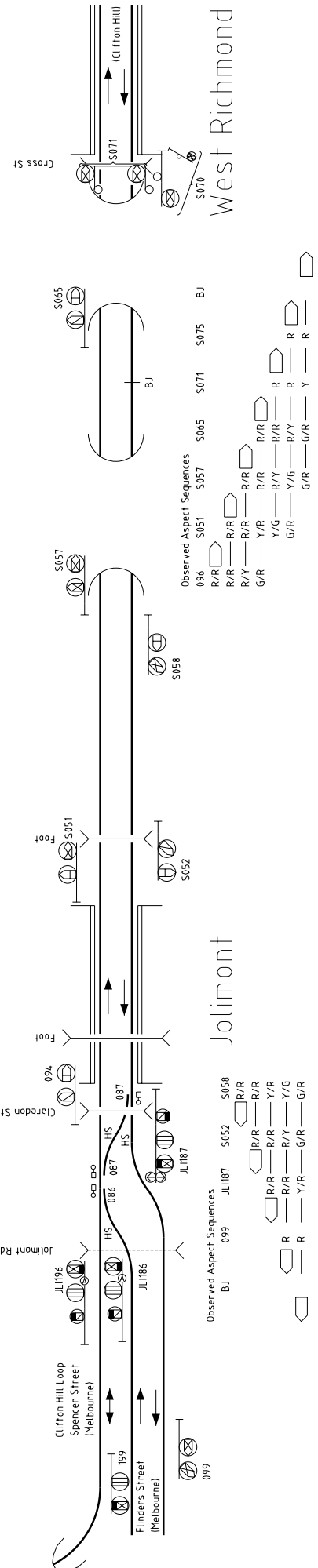
The next meeting will be on Friday 20 September 2002 at the Surrey Hills Neighbourhood Centre, 1 Bedford Street, Surrey Hills, commencing at 20:00 hours (8.00pm).

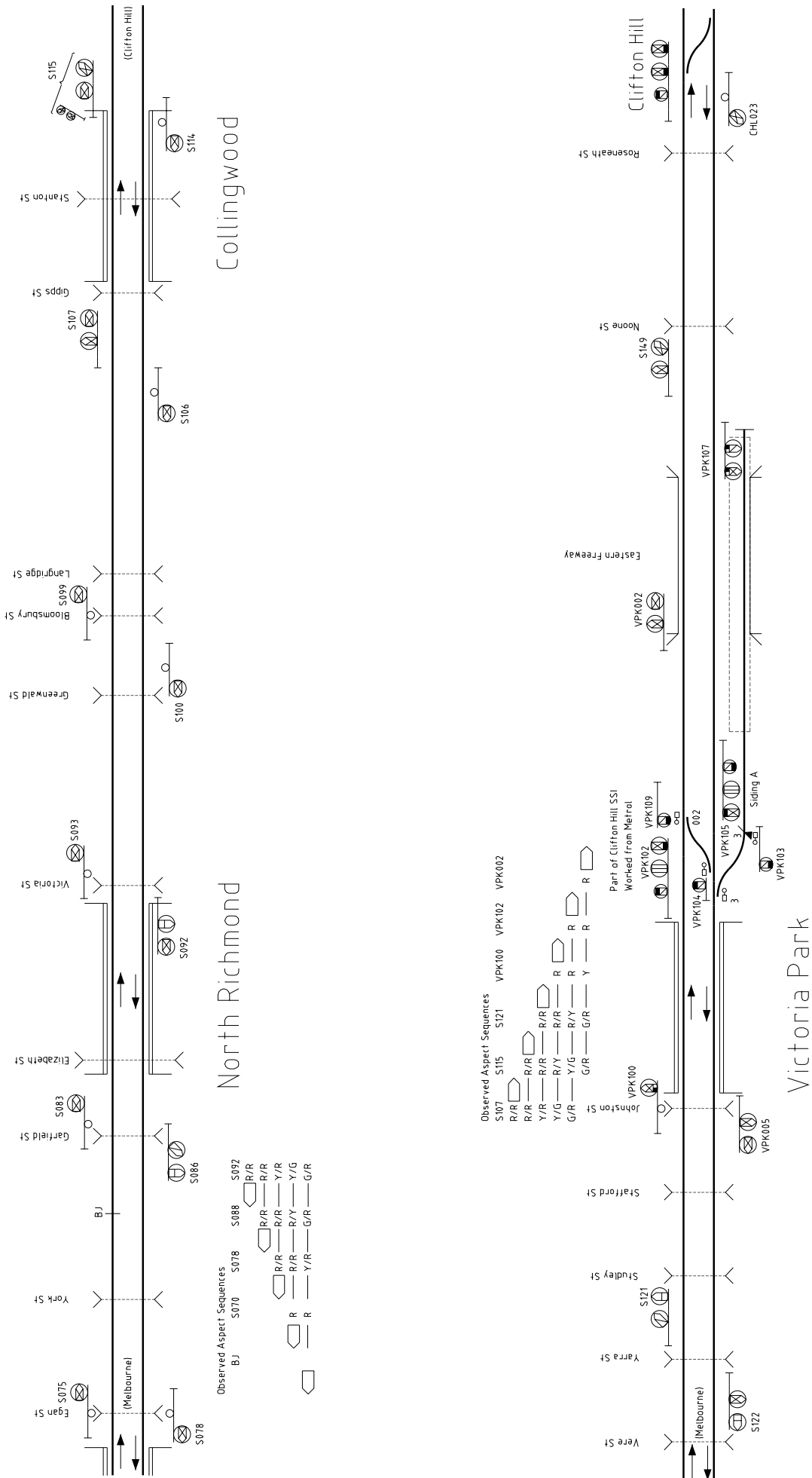
## SIGNALLING ALTERATIONS

*The following alterations were published in WN 22/02 to WN 31/02 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.*

- |            |  |                       |
|------------|--|-----------------------|
| 06.06.2002 | <b>Hastings - Stony Point</b><br>From Thursday, 6.6., Staff Tickets will not be issued for this section and the Train Staff Ticket Boxes were withdrawn. The feather of the Train Staff will be removed. | (SW 57/02, WN 22/02)  |
| 07.06.2002 | <b>Sunshine</b><br>On Friday, 7.6., Down Automatic M395 was replaced by a new mast.  | (SW 58/02, WN 22/02)  |
| 08.06.2002 | <b>West Richmond</b><br>On Saturday, 8.6., Down Automatic S71 was replaced by a LED tri-colour signal. This was the last triangular 'Style VR' head in service.  | (SW 515/02, WN 22/02) |

- 09.06.2002 **West Richmond** (SW 515/02, WN 22/02)  
On Sunday, 9.6., a co-acting signal was provided for Down Automatic S71. The co-acting signal is located on the Up side of the line on the abutment of the overbridge. Amend Diagram 23/98.
- 09.06.2002 **Victoria Park** (SW 518/02, WN 24/02)  
On Sunday, 9.6., Up Automatic S128 located at the Up end of Victoria Park platform was replaced by a new mast with a LED tri-colour head. Amend Diagram 23/98.
- 10.06.2002 **Sandringham line** (SW 59/02, WN 22/02)  
From Monday, 10.6., the following works were carried out: Down Automatic B251 (Balaclava) was replaced by a new mast; Up Automatic B270 (Ripponlea) was shortened; a new post was erected, but not commissioned, for Up Automatic B498 (Brighton Beach); and the landing was rotated on Down Controlled Automatic SHM 905.
- 14.06.2002 **Eltham** (SW 521/02, WN 24/02)  
From Friday, 14.6., pedestrian gates were provided at Diamond Street (27.615 km). Amend Diagram 83/97.
- 14.06.2002 **Ferntree Gully** (SW 517/02, WN 23/02)  
From Friday, 14.6., pedestrian gates were provided at Alpine Street (36.088 km). Amend Diagram 45/99.
- 21.06.2002 **South Yarra - Balaclava** (SW 62/02, WN 23/02)  
Between Tuesday, 18.6., and Friday, 21.6., the heads on all the search light signals between Up Automatic B142 (South Yarra) and Up Automatic B222 (between Windsor and Balaclava) were converted to LED tri-colour units.
- 20.06.2002 **Terang** (SW 1058/02, WN 23/02)  
On Thursday, 20.6., the siding was recommissioned. The siding is to be used only for the stabling of track machines and vehicles. The Up end points are secured by a Minature Master Key Lock and are rodded to a Hayes Derail and Crowder. The Down end points remain spiked normal, and the hand points leading from No 2 to No 3 Track are spiked for No 3 Track. There is 50 metres standing room in the siding.
- 23.06.2002 **South Yarra - Riponlea** (SW 66/02, WN 24/02)  
On Sunday, 23.6., the marker lights on all signals between Up Automatic B142 (South Yarra) and Up Automatic B270 (Ripponlea) were converted from incandescent lights to LED units except Down Automatic B251 at Balaclava.
- 23.06.2002 **Dandenong** (SW 65/02, WN 23/02)  
On Sunday, 23.6., compound Points 607U were converted to claw locks.
- 24.04.2002 **Jolimont - Clifton Hill** (SW 520/02 & 523/02, WN 24/02)  
On Monday, 24.6., the new signalling between Jolimont and Clifton Hill was brought into use. The remaining upper quadrant automatic signals and searchlight signals were replaced by tri-colour LED signals mostly on new posts. Between Jolimont and Collingwood the new signals are largely at the locations of the signals they replaced. Between Collingwood and Victoria Park the signals have been relocated. Four aspect signalling has been provided on the Down line between Victoria Park and Clifton Hill and between Collingwood and Victoria Park on the Up line.  
The relay interlocking and emergency panel at Victoria Park were removed and the interlocking incorporated within the Clifton Hill SSI. The trailing crossover at Victoria Park and Dwarf VPK109 were restored to service. The illuminated letter 'A' was removed from Up Home VPK105 at Victoria Park. The approach clearing of Automatic S052 at Jolimont was removed.  
Diagram 03/02 replaced 23/98. (Note: Diagram 03/02 incorrectly shows Down Automatic S97 which has been abolished).





- (25.06.2002) **Newport Workshops** (SW 67/02, WN 24/02)  
 No 1 Siding (Test Track) is used to test the new Siemens train. It is enclosed by a security fence with a security gate at the Up end of the siding and a rail access gate 312 metres from the security gate. No 1 Siding is 680 metres in length between the security gate and the fence across the siding at the Down end. A derail is located at the Up end of the siding five metres from the security gates. A terminal stop sign (white star with black dot in the centre) is provided 25 metres from the Down end of the siding and baulks three metres from the Down end security fence.  
 A maximum speed of 30 km/h is allowed in No 1 Siding provided that all gates are closed and locked, the derail is on, and a point clip is securing the hand points in the siding for the siding.
- 26.06.2002 **Newport Workshops** (SW 71/02, WN 25/02)  
 From 1600 hours, Wednesday, 26.6., the Down end of No 1 Siding (Test Track) beyond the hand points was booked out of service. The points were secured reverse by point clip, and the section between the Up end security gates and the hand points is available for train movements.
- 28.06.2002 **Fairfield** (SW 522/02, WN 24/02)  
 On Friday, 28.6., pedestrian gates were provided at Station Street (9.253 km). Amend Diagram 7/00.
- 06.07.2002 **Clayton** (SW 72/02, WN 25/02)  
 On Saturday, 6.7., the masts of Automatics D663 and D664 were straightened and the signals refocussed.
- 07.07.2002 **Dandenong** (SW 74/02, WN 25/02)  
 On Sunday, 7.7., Compound Points 626D were converted to claw locks.
- 07.07.2002 **South Yarra - Elsternwick** (SW 73/02, WN 25/02)  
 On Sunday, 7.7., all the searchlight signals on the Down line between Automatic B157 (South Yarra) and Home B313 (Elsternwick) were converted to tri-colour LED heads.
- (09.07.2002) **Ballarat** (SW 1064/02, WN 26/02)  
 Whenever a train is to be admitted to No 1 Platform while the line is occupied the following procedure must be complied with. After Down Home 40 is placed at Stop and Crossover 23 reversed the signals may be cleared for the train to approach Home 40. When the train has come to a stand at the signal and the locking has been released Crossover 23 can be restored to normal and Home 40 can be cleared for the train to enter the platform.
- 13.07.2002 **Caulfield** (SW 75/02, WN 26/02)  
 On Saturday, 13.7., Dwarf CFD770 was replaced by a new two metre mast and the light unit refocussed.
- 16.07.2002 **Broadford** (SW 1063/02, WN 26/02)  
 On Tuesday, 16.7., the incandescent lamps fitted to the co-acting Down Homes on Posts 17 and 18 were replaced by white LED units.
- 16.07.2002 **Shepparton** (SW 1063/02, WN 26/02)  
 On Tuesday, 16.7., the incandescent lamp fitted to the Down Home on Post 1 was replaced by a white LED unit.
- 21.07.2002 **South Yarra - Elsternwick** (SW 76/02, WN 27/02)  
 On Sunday, 21.7., all the searchlight signals on the Up line between Automatic B142 (South Yarra) and B306 (Elsternwick) were converted to tri-colour LED heads.
- (16.07.2002) **Newport Workshops** (SW 79/02, WN 27/02)  
 The section of No 1 Siding (Test Track) that was booked out of service has been restored to use. SW 71/02 is cancelled.
- (16.07.2002) **Donald**  
*Donald Intermediate Siding*  
 Donald Intermediate Siding is located in the Donald Loop - Watchem Loop section immediately on the Down side of the crossing loop. Trains shunting at the siding must be in possession of a Train Order for the section or a Train Order to shunt within the location boards. The Up and Down end main line points are worked by Non Trailable Point Machines rodded to safety points or Hayes Derails and Crowders in the siding. The points are secured by ST21 locks and the point handles are secured by V5PSW padlocks. The level crossings at each of the yard are equipped with motion detectors and the flashing lights will operate at line speed for main line movements. For movements from the yard the flashing lights will commence to operate as the train is approaching the crossing. V5PSW keyswitches are provided at both ends of the siding for manual operation of the flashing lights.  
 Rail Tractor Shunter Operations  
 A rail tractor is authorised to operate within Nos 3, 4, 5, and 6 Roads at Donald Intermediate Siding. Operation of the Rail Tractor must only occur when no locomotives are operating in the siding. Hinged boards are provided at each entrance to the yard facing arriving trains and the Rail Tractor Operator holds the key to the padlock that secures the boards. Prior to commencing tractor shunting the operator must lower and lock the boards. When operations cease the boards must be raised and locked. Train crews must ensure that the boards are raised before entering the siding.  
 Yard Lighting  
 The lighting for the siding is controlled by a remote control switch. To operate the lights the radio is to be set to Channel 9 and the transmit button pressed. The lights will then switch on for 90 minutes. If additional time is required the lights may be restarted by retransmitting on Channel 9.

#### Down trains shunting

Down trains will come to a stand before Hammell Street at the Down end of the siding. The rear of the train is to be secured and the Donald loading is to be cut off and drawn forward. When clear of the points the point lever is to be unlocked and the siding shunted as required. When moving out of the siding the flashing lights at Hammell Street will commence to operate prior to entering the main line. At the completion of shunting, and when clear of the points, the points are to be restored to normal and locked. When moving towards the flashing lights on the main line from the Up side, the train crew must check that the flashing lights are operating before entering the crossing.

#### Up trains shunting

Up trains are to shunt in a similar fashion to Down trains. Up trains must be brought to a stand clear of Campbell Street and, if possible, clear of Hammell Street.

#### *Donald Sub-Terminal Siding*

The Donald Sub-Terminal siding leads from the Up end of the Down Loop. The points to the siding are worked by a Non Trailable Point Machine rodded to a Hayes Derail and Crowder in the siding. The Point Machine is secured by a ST21 lock and the hand operation lever is locked by a V5PSW lock. The Racecourse Road level crossing at the entrance to the siding is protected by flashing lights. V5PSW keyswitches are provided on each side of the level crossing to start operation of the flashing lights; the lights will cease to operate when the movement is clear of the crossing. Grain loading is conducted in the right hand road of the loop. The left hand loop is an engine run around and there is a short dead end siding at the Up end. There is a level crossing at the Up end of the siding which is to be left clear at the completion of shunting.

Empty vehicles are normally placed by Down trains. Down trains will be able to shunt the siding on the Train Order they arrived upon. Loaded vehicles are normally cleared by Up trains which will require a Train Order for the Donald Loop - Sutherland Loop section or a Train Order to shunt between Location Boards.

#### Yard Lighting

The lighting for the siding is controlled by a remote control switch. To operate the lights the radio is to be set to Channel 10 and the transmit button pressed. The lights will then switch on for 90 minutes. If additional time is required the lights may be restarted by retransmitting on Channel 10.

#### Down trains shunting

Down trains must come to a stand at the Down Repeater Post DON 1 where a competent employee will detach the required vehicles and secure the rest of the train. The vehicles are to be drawn into the Down Loop, ensuring that the flashing lights at the Sunraysia Highway are operating prior to entering the crossing. When the rear of the train is beyond the points to the Sub Terminal, the competent employee will unlock and reverse the points. The employee will instruct the Driver to set back and operate the flashing lights at Racecourse Road before the train enters the crossing. When returning to Donald Loop the competent employee must operate the flashing lights at Racecourse Road using the V5PSW keyswitch. When clear of the siding points the employee will restore the points to normal and test them. The locomotive is then to set back towards the train on the main line ensuring that the flashing lights at Sunraysia Highway are operating. After attaching to the train the train may depart, again ensuring that the flashing lights at Sunraysia Highway are operating.

#### Up trains shunting.

Up trains must come to a stand in the Up loop leaving sufficient room to attach vehicles. The locomotives are to be detached and run ahead until clear of the trailable points. After checking that the points are lying towards the Down loop the locomotives are to be set back until clear of the points to the siding. The siding points are to be reversed by the competent employee. The locomotives are to enter the siding and run around the vehicles via the left hand road. The competent employee is to operate the flashing lights at Racecourse Road prior to entering the crossing. The locomotives are then to set back and push the vehicles to the Down loop. Again, the competent employee is to operate the flashing lights at Racecourse Road. When clear of the siding points the employee is to restore the points to normal and test them. The locomotive and vehicles are to run ahead to the single line, ensuring that the flashing lights at Sunraysia Highway are operating if it is necessary to cross the level crossing. The Up end loop points will then be reversed and the vehicles set back onto the train. When departing it is necessary to ensure that the flashing lights at Sunraysia Highway are operating before the train enters the crossing

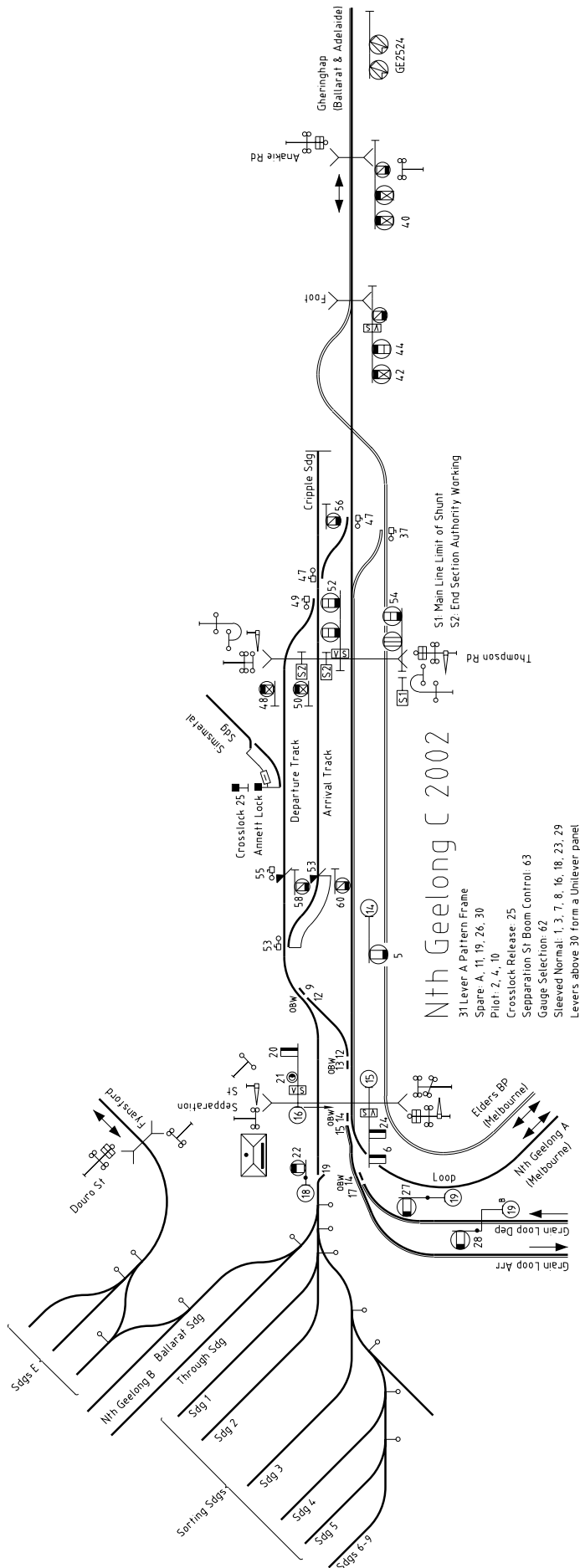
#### Marshalling Instructions

Loading to be detached at Donald Sub Terminal or Donald Intermediate Siding is to be marshalled so as to be on the locomotive on arrival at Donald. Yard staff at Dynon, North Geelong, and Ballarat to give this close oversight. Up trains clearing loading from either siding is to attach the loading behind the locomotives.

- (16.07.2002) **Narre Warren - Pakenham** (SW 77/02 & 78/02, WN 27/02)  
Diagram 13/02 replaced 33/98 'as in service'. The main alterations are the extension of No 4 Track at Pakenham by 17 metres by the relocation of the hand points between No 3 and 4 Tracks at the Down end. The Diagram is to be amended by adding boom barriers at Racecourse and Ryan Roads.
- 28.07.2002 **Seaford** (SW 81/02, WN 28/02)  
Between 0730 Saturday, 27.7., and 1800 hours Sunday, 28.7., permanent wiring and circuit alterations were carried out to reflect the previous removal of the crossover and panel. The approach timing for Station Street and Seaford Road will be altered.

- (30.07.2002) **Dandenong - Hallam & Lyndhurst** (SW 83/02, WN 29/02)  
Diagram 1/02 replaced 35/99 "as in service". The main alteration is the abolition of the Pilkington Glass Works Siding. The diagram is to be amended by replacing the Dandenong - Hastings Road at the Down end of Lyndhurst Loop by an overpass.
- (30.07.2002) **Carrum** (SW 82/02, WN 29/02)  
The instructions in Section 34 relating to the issue of Caution Orders for Up Home 18 (see SW 14/01) are cancelled. If this signal fails the Signaller must proceed to the signal and hand the Driver a Caution Order as per Section 4, Clause 4e.
- 01.08.2002 **North Geelong C** (SW 1073/02 & 1074/02, WN 30/02)  
On Sunday, 4.8., a fixed 'TR' (Gauge Splitter) was provided in the Broad Gauge main line on the Down side of Thompsons Road facing Down movements. A Standard Gauge connection was provided from the gauge splitter to the Standard Gauge main line but not commissioned. Points 53 were slued to a new alignment. The incandescent signal heads on Posts 19 and 19B were replaced by LED heads.
- 03.08.2002 **Flinders Street** (SW 84/02, WN 30/02)  
Home 736 was relocated 1 metre closer to the SPOT monitor and a fence erected in front of the signal.
- 04.08.2002 **Sunbury** (SW 70/02, WN 29/02)  
On Sunday, 4.8., emergency 'E' and 'F' pattern Annett keys will be provided to release the points to the stabling siding during a power failure. The keys are secured in circuit controllers in a locked cabinet adjacent to the panel. When either of the keys are removed from the circuit controllers the signals protecting the siding are secured at Stop and Annett keys in the crosslocks will be locked in. The key to the cabinet is normally kept in the station safe.
- a) Release of Keys during Power Failure  
When a signalling power failure has occurred and it is necessary to shunt the stabling siding the Signaller must first check that all protecting signals are at Stop. The cabinet key can then be obtained from the safe and the Annett keys removed. An entry must be made in the TRB respecting the removal of the keys. The shunting operations may then be performed as required.
- b) Restoration of Power or Completion of Shunting  
When the shunting has been completed or power has been restored the Annett keys are to be returned to the circuit controllers, the cabinet locked, and the key returned to the safe. An entry must be made in the TRB respecting the return of the Annett keys.
- c) Use of the Emergency Keys for Maintenance Purposes  
The emergency keys may be used for maintenance work (without a power failure). The Works Leader must obtain the permission of the Signaller. Before granting permission the Signaller must check that a release has not been given for either of the Crosslocks, the maintenance can be completed at least 10 minutes prior to the arrival of the next scheduled train, and the signals have not been cleared for a Down train. A suitable entry must be made in the TRB which must be signed by the Works Leader. The keys may then be removed from the circuit controller. When the work has been completed the Team Leader is to replace the Annett keys and the Signaller must lock the cabinet and return the key to the safe. An entry must be made in the TRB which must be signed by the Works Leader.
- 05.08.2002 **Traralgon** (SW 1077/02, WN 30/02)  
Commencing Monday, 5.8., the Signaller at Traralgon may cease duty after the Electric Staff has been withdrawn at Maryvale for Train 9462. The Staff is to be retained in the pocket of the instrument for Train 9442 the next day.
- 10.08.2002 **Menzies Creek** (A24/02)  
On Saturday, 10.8., a modified wedge lock was fitted to the small point lever on the points to the Museum Access Road. The modification consists of an additional protrusion which secures the catch of the point lever in the notch irrespective of the position of the lever. The wedge lock must be applied at all times when operating personnel are not at the point lever.
- 11.08.2002 **Elsternwick - North Brighton** (SW 87/02, WN 30/02)  
On Sunday, 11.8., all of the signals between B318 (Elsternwick) and B369 (between Gardenvale and North Brighton) were converted from searchlight to tri-colour LED heads.
- 13.08.2002 **North Geelong C** (SW 1075/02, WN 31/02)  
Between Friday, 9.8., and Tuesday, 13.8., Standard Gauge access was provided to the Grain Loop. As part of the alterations the main line between North Geelong B and North Geelong C was downgraded to a siding. Diagram 16/02 replaced 4/98.  
Standard Gauge access to the Grain Loop is via the Broad Gauge main line which was converted to Dual Gauge between Separation Street and Thompson Road. Points 37 were provided in the Standard Gauge main line on the Down side of Thompson Rd to provide access to the Dual Gauge line. These points are provided with a dual control point machine and are equipped with a self normalising facility. Up Home 44 was altered to show Normal and Low Speed indications for Standard Gauge moves and illuminated 'V' and 'S' indicators provided on Down Home 52.  
The connections to Yard Road Nos 3 to 9 from the Broad Gauge main line via Points 16 has been removed and the lead to the yard roads slued to connect to the Through Siding. Points 16, Catch 16, and the Dwarf signals on Posts 20 and 21 were abolished. Disc 7 on Post 15 was removed. Illuminated 'V' and 'S' indica-





tors were provided on Posts 15 and 16. Points 15 and 17 were relocated 25 metres in the Up direction. Post 19 was relocated 7 metres in the Up direction and Post 19B 75 metres in the Up direction.

Gauge detection is provided for Up movements approaching Anakie Road on the main line, at Post 14, and approaching Post 19B on the Grain Loop. Gauge detection at Anakie Road will continue to require the Signaller to operate lever 62 to select the gauge. Movements from the Arrival or Departure Tracks or from the Loop line will indicate as Broad Gauge movements.

The main line between North Geelong B and C boxes was downgraded to a siding and renamed the 'Ballarat Siding'. The siding is to be used for shunting and locomotive movements under the direction of the Area Co-ordinator. Vehicles and locomotives are not to be stabled or left unattended on the siding at any time. The Electric Staff System of operation was cancelled and the miniature Electric Staff instruments and transfer magazine were removed. The Ballarat Siding was slued to connect with the Through Siding and the former connection across Separation Street was removed. Points 10 were removed. Points 12 were relocated 20 metres in the Down direction. Dwarf 29 was abolished. The Staff Lock, rodded connection, and small point lever was removed from the crossover to Siding C. The crossover is now worked by WSA levers.

Ground Dwarf 22 (Post 18) was replaced by a two position Light Dwarf signal and relocated, with Catch 19, two metres in the Up direction. Reflective Boards were provided at ground level to indicate the clearance point of each siding for departing movements and the road number for each arriving movement. Permission must be obtained from the Signaller prior to a movement passing the clearance point towards Dwarf 18.

The Train Staff and Ticket System will remain in force over the Grain Loop.

Circuit alterations were carried out to allow for movements between the Broad Gauge Arrival and Departure Tracks and the Cripple Track while North Geelong 'C' is operating in Automatic mode.

Push buttons were provided on the panel to control Points 37. Lever 10 was converted to a pilot lever. Levers 7, 16, 23, and 29 were sleeved normal.

Operation of Standard Gauge movements to and from the Grain Loop

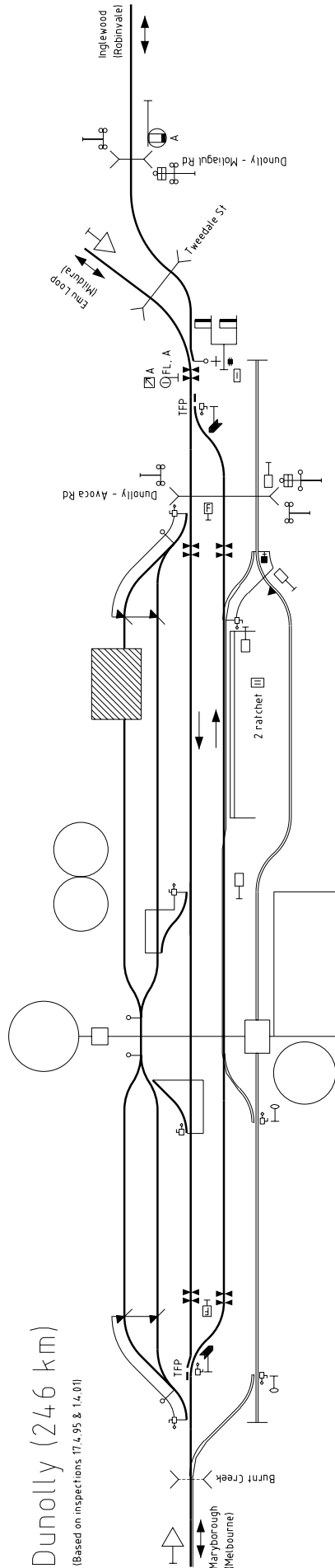
Prior to authorising a Standard Gauge train to depart Gheringhap Loop for the Grain Loop the ARTC Train Controller will confirm with the Signaller at North Geelong C that the signalbox is switched in and that the train can be worked clear of the Standard Gauge main line without delaying other traffic. When a Standard Gauge train is to ready to depart towards Gheringhap the Signaller must confirm with the ARTC Train Controller that the train has a Section Authority and request permission to despatch the train. Points 37 will self normalise to normal after the passage of a train to or from the Grain Loop but the Signaller must confirm this from the diagram. When a Standard Gauge Track Machine is to run over Points 37 reverse the points must be placed in the hand operating mode for the movement as track machines cannot be relied upon to operated track circuits.

# MARYBOROUGH - YELTA

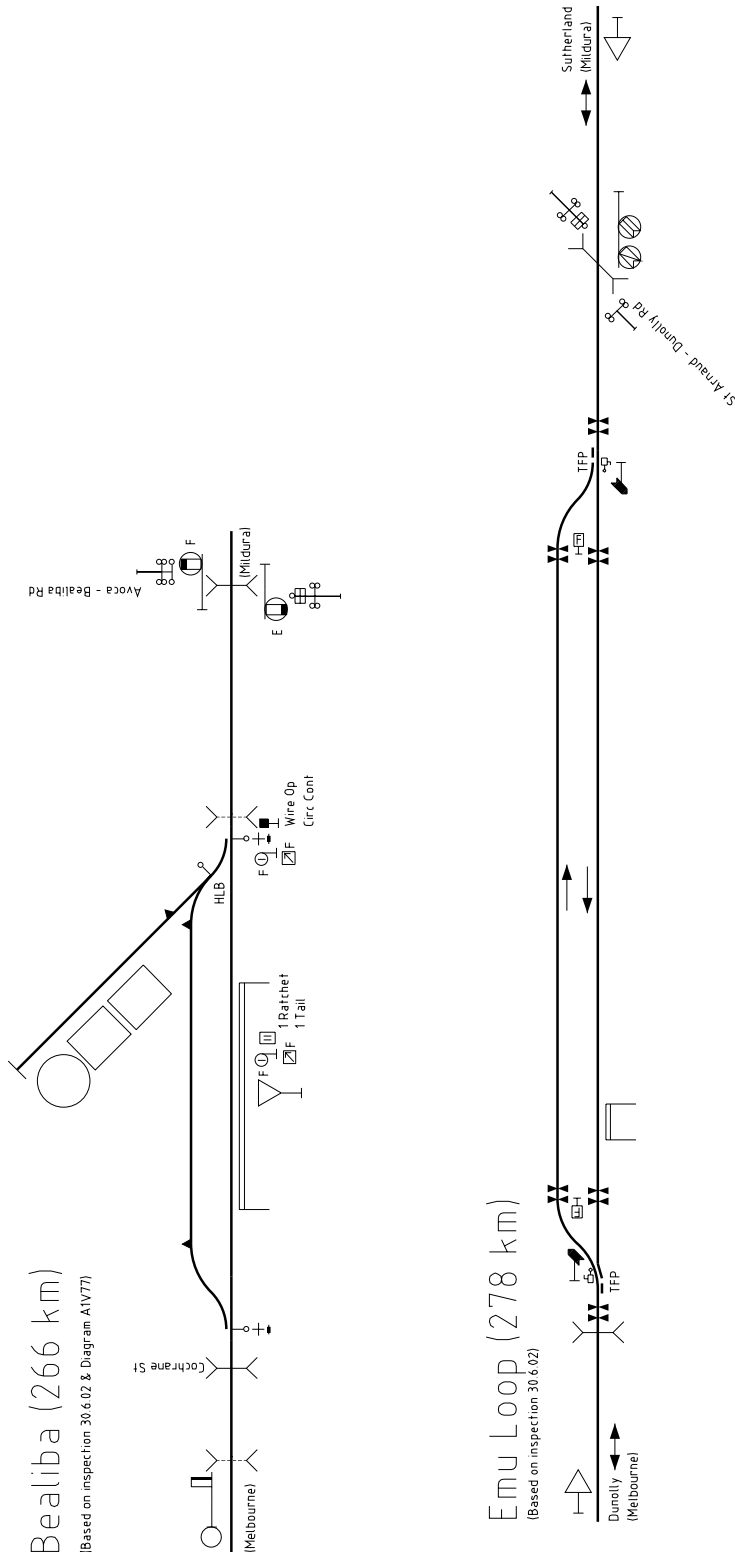
The following diagrams show the current layouts of the stations between Maryborough and Yelta. Bealiba to Tempy was inspected at the end of June, Nunga to Yelta in April and again in August. Dunolly was inspected in April 2001. The line is worked by Train Orders with the sections: Maryborough - Dunolly - Emu Loop - Sutherland Loop - Donald - Watchem Loop - Birchip Loop - Curyo Block Point - Woomelang Loop - Gama Block Point - Speed Loop - Ouyen - Hattah Block Point - Carwarp Loop - Yatpool Block Point - Yelta.

The section between Maryborough and Dunolly is Dual Gauge to allow Standard Gauge trains to load wheat from the Dunolly Sub Terminal for export via Portland.

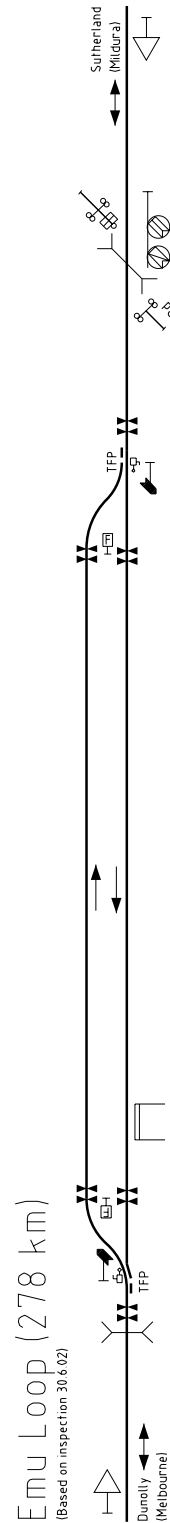
Crossing loops are equipped with trailable point machines set so that loaded Up trains take the straight line upon entry to the loop. Other points at crossing



Dunolly (246 km)  
(Based on inspections 17.7.95 & 1.4.01)



Bealiba (266 km)  
(Based on inspection 30.6.02 & Diagram A1V77)



Emu Loop (278 km)  
(Based on inspection 30.6.02)

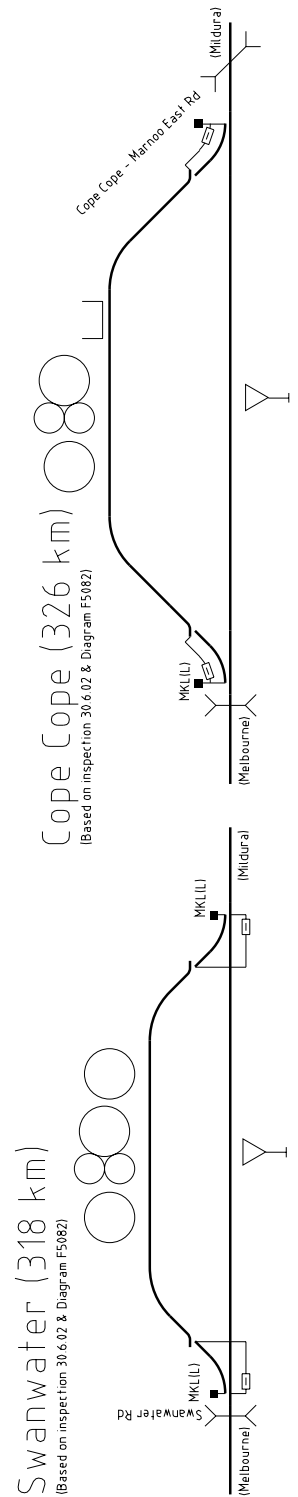
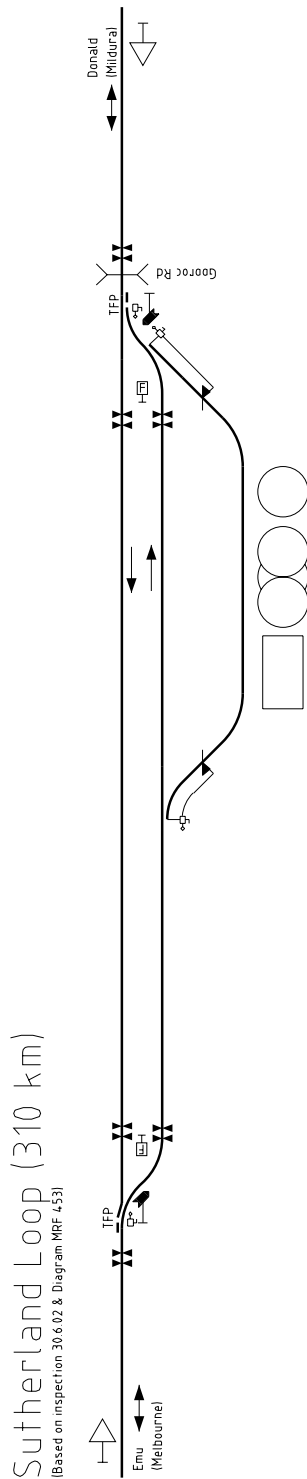
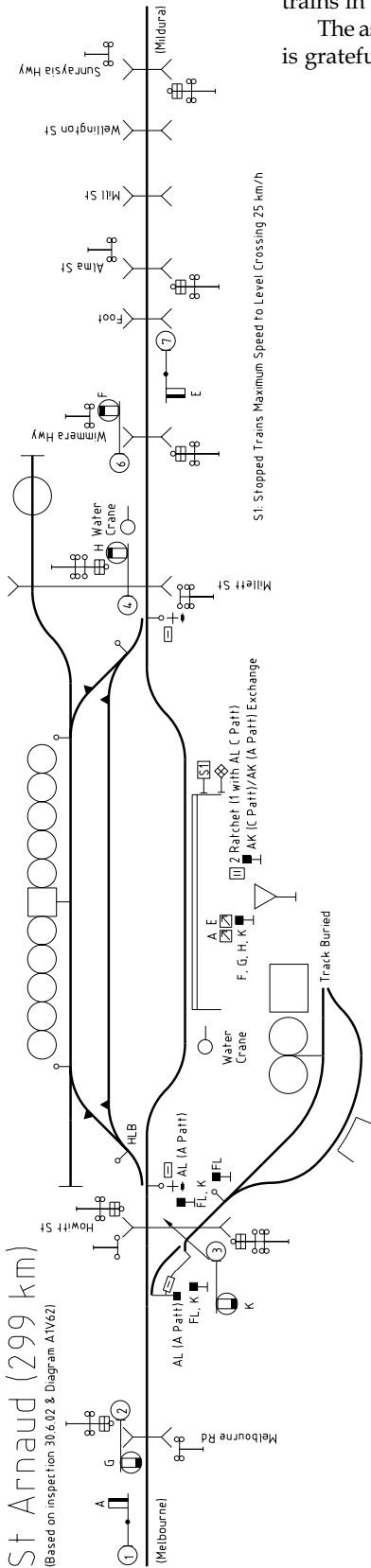
loops are normally equipped with non-trailable point machines secured by ST21 (Fortress) locks.

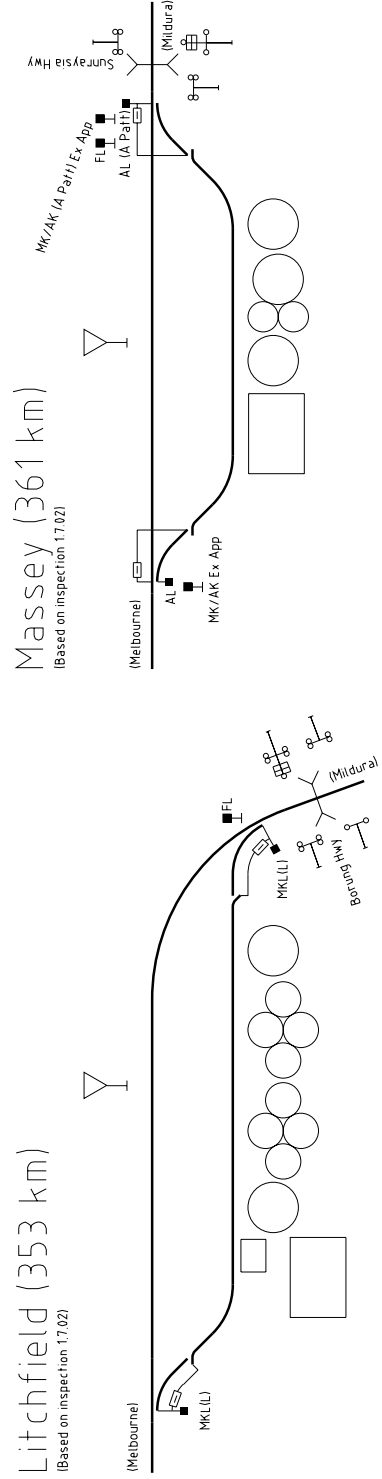
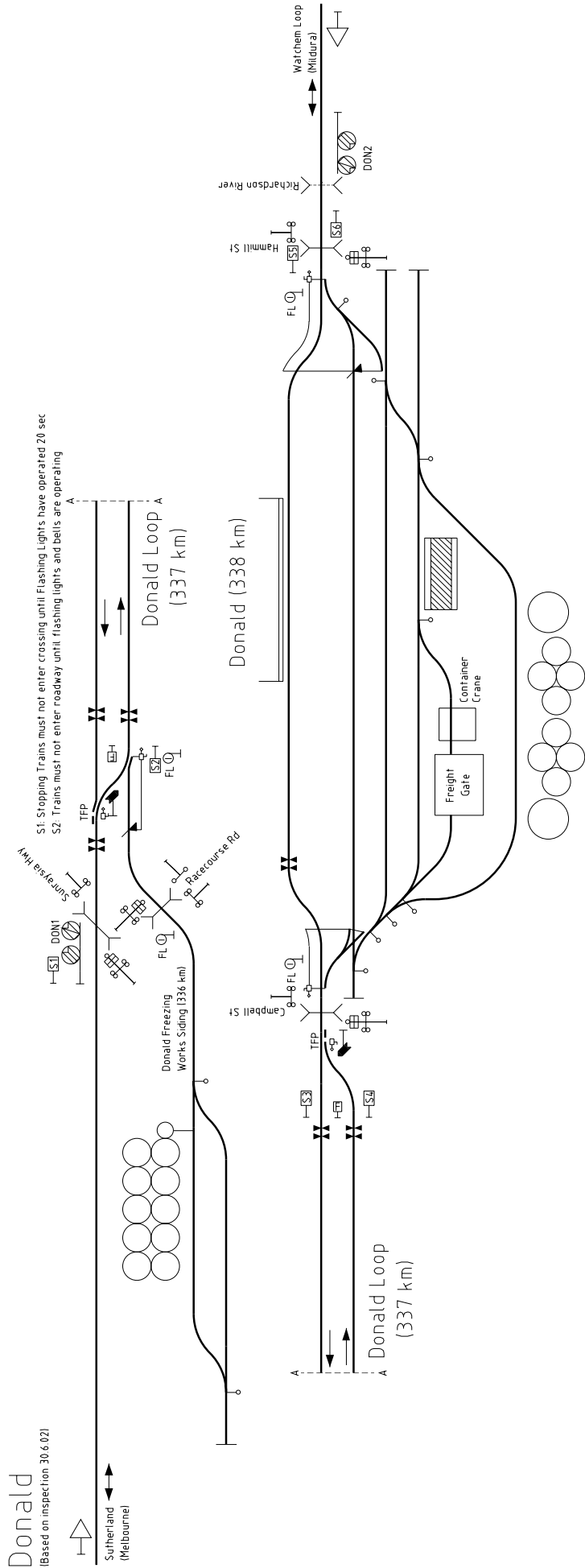
Intermediate sidings on the Up side of Mildura are generally secured by large Master Key locks (i.e. large Staff Locks) worked by small point levers and rodde to roll out protection. Bealiba, St Arnaud, Hattah, and Irymple, former crossing loops, retain their plunger locking and Home signals. Plunger locking is also provided at the junction points at Dunolly and at the Up end of Ouyen.

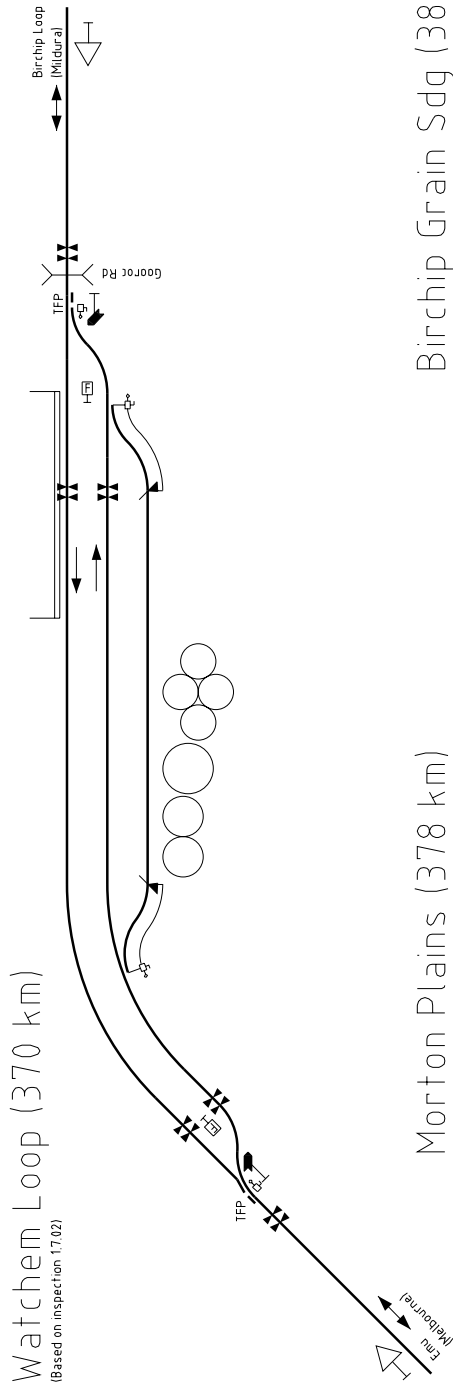
The larger townships (Dunolly, Bealiba, St Arnaud, Donald, Watchem, Birchip, Woomelang, Speed, Ouyen, Redcliffs, Irymple, and Mildura) retain passenger platforms. Woomelang even has two - one on each loop. The loop at Birchip is arranged so that two platforms are unnecessary, and the platforms at Watchem and Speed can only be served by trains in one direction.

The assistance of Bruce McLean and Chris Wurr in providing diagrams beyond Woomelang is gratefully acknowledged.

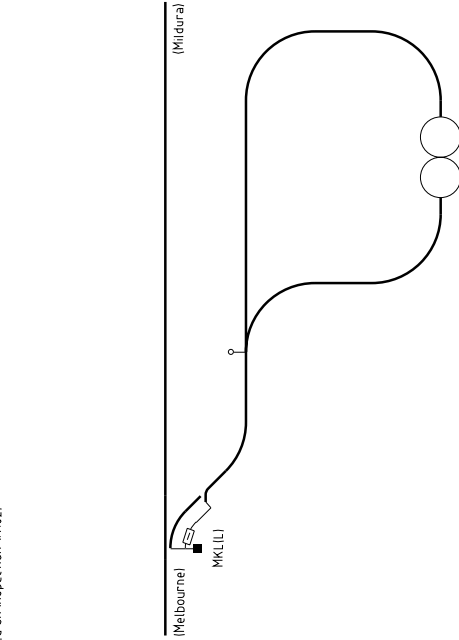
(To be continued)



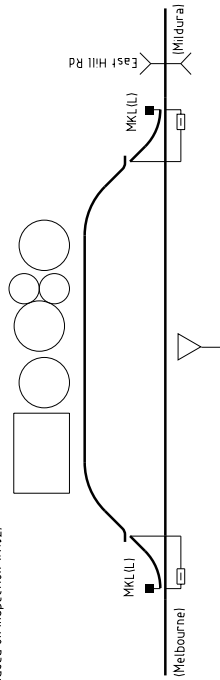




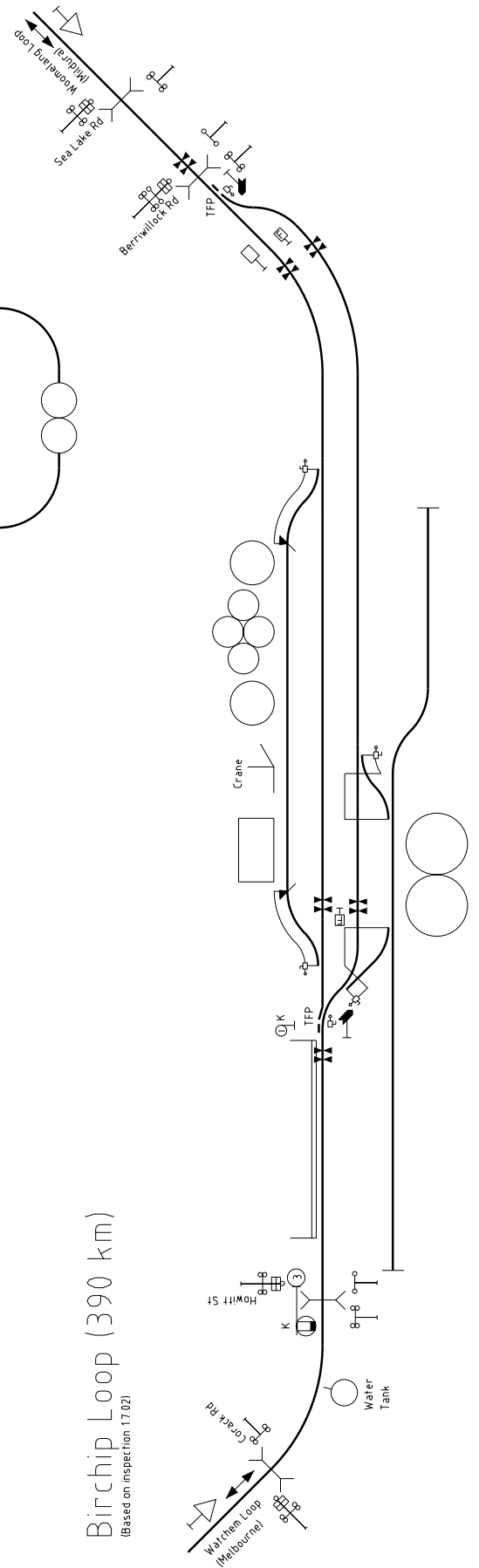
**Birchip Grain Sdg (386 km)**  
(Based on inspection 1.7.02)



**Morton Plains (378 km)**  
(Based on inspection 1.7.02)



**Birchip Loop (390 km)**  
(Based on inspection 1.7.02)



## DISC SIGNALS

As a general rule shunting moves over interlocked points are signalled in Victoria. The standard mechanical shunting signal used in Victoria is the disc signal. Unlike the UK, Victorian disc signals were normally mounted on posts. This practice was shared with Western Australia and New Zealand (and, to a lesser extent, with Queensland) which suggests that McKenzie and Holland were involved in the decision. The signalling branch officially referred to post mounted discs under the quaint name of 'Disc Signal - Wall Bracket Type'.

### Description

The disc signal reaches back to the dawn of railway signalling and predates the semaphore signal. The stop signal was shown by a large red disc shown face on to approaching traffic. The signal was 'removed' when at clear; in practice it was rotated 90 degrees around a vertical pivot so that the disc was viewed edge on and consequently disappeared from view. The problem with discs was that there was no positive 'clear' signal and it was largely for this reason that the disc signal was replaced by the semaphore signal in the UK for main line signalling. It continued to be used for main line signalling in France and Germany. A few UK railway companies, however, adopted the disc signal for shunting moves in the form of a ground disc. In this role it had the advantage of a large stop target that was quite distinct from the semaphore signals provided for running moves. As far as I know, no UK railway adopted a post mounted disc signal for shunting.

Victoria adopted the post mounted disc signal for shunting moves. The danger indication is shown by a red disc, 18" in diameter, with a small red lens in the centre of the disc. C17/25 (issued WN 42/25) altered the rulebook to allow the use of a purple light for the 'on' signal and this was still allowed in the 1966 rulebook but not in the 1987 rulebook. It is not known how common the use of the purple light was. When the signal is cleared, the disc rotates ninety degrees around a vertical spindle and effectively disappears. The daylight clear signal is consequently shown by the absence of the disc. Looking for the absence of something is quite hard, particularly when the signal is against the sun, and it is consequently important for train crews to know the arrangement of signals at a particular location. Queensland used an identical disc to Victoria (among other shunting signals) but mounted a smaller diameter disc on the 'off' face with a red bar at 45 degrees to provide a positive 'clear' signal. Returning to Victoria, originally the 'off' indication was a white light. In 1898 this was changed to be a green light.

The construction of the disc signal is straightforward. The disc itself is steel circle 18" in diameter and is enamelled red on the front and white on the rear. A red lens 3 5/8" diameter mounted in a brass bezel is fixed in the centre of the disc. Bolted on to the back of the disc is a horseshoe shaped shield. This is enamelled black inside and out except for the outside of the curved face which is white; this allows the signaller to check that discs facing away from the signalbox are correctly at stop. A small slot 3" long by 1 1/2" wide in the curved face forms a backlight to show a white light to the rear when the disc is at stop. The green lens is mounted in one of the two flat sides of the shield depending on whether the disc is mounted on the left or right hand side of the post. The 'off' lens is an extended slot 6" long by 3 5/8" wide mounted in a brass bezel. The extended length provided for the situation where the disc does not go completely off due to slight misadjustment.

Together the disc and shield are referred to as the target. The target can be ordered in left hand and right versions; this represents the side of the post the disc was to be mounted on. The difference between the two versions is in the location of the 'off' lens.

The target is bolted to a cast iron carrier which rotates on a stud supported by a cast iron bracket. The bracket is mounted on the post by four 3/8" bolts. On a wooden post the bracket is screwed directly to the post by coach bolts. On a steel lattice or batten post the bracket is bolted to two steel flats which are attached to the vertical angles by means of hook bolts. On a pipe mast the bracket is attached to the mast by means of a U bolt. On a wood, lattice or batten mast the brackets are not mounted on the centre line of the post, instead they are mounted roughly in line with the front of the post. The centre of the disc is 20 3/4" from the side of the post. Where more than one disc is mounted on one side of a post, the discs are at a 3' vertical spacing. The normal (minimum) distance of a disc below a semaphore arm is 3', but greater distances exist.

The brackets may be mounted on the lefthand, righthand, or front of the post. The disc always rotates away from the post as the bottom of the disc does not clear the operating rod. Mounting the disc on the front of the post was uncommon, but is possible for sighting or other reasons. With this arrangement it is possible to have three discs in a row.

A crank fixed to the bracket converts the vertical movement of the down rod to a horizontal movement. This is transferred to the target carrier via a short operating rod. Four mounting holes are provided in the bracket for the crank. A Victorian signal post can have up to four down rods on each side of the post spaced at 1 7/8" intervals. The four holes in the bracket allow the crank to be worked by any of the four down rods. Normally the lowest disc on a post is worked by the outermost down rod, with successively higher discs being worked by the successive rods closer to the post. Semaphore arms on the post (if any) are worked by the innermost down rods. This arrangement means that the cranks are not fouled by down rods. However, where necessary, down rods can be set to clear a crank.

It is possible to have up to five discs on each side of a post. Since the standard lever plates and down rod guides in use in Victoria only accommodated up to four down rods, working of the fifth disc was achieved in a non standard way. The only example of a such a post that I examined was at Bendigo A and there it was achieved by mounting a separate lever plate on the rear of the post. This lever drove the lowest disc and the down rod was at the rear of the post. The crank on the disc bracket was in two parts; one arm was at the back of the bracket and the other other was on the front and drove the disc as per normal. Two of the four front down rods had to be set out and then back in to clear the lowest crank.

There appears to have been two mechanisms for driving the target carrier from the horizontal operating rod. In the modern mechanism, illustrated by diagram H549 and the photographs, the operating rod is connected directly to the target carrier. In the older mechanism the horizontal operating rod drove a vertical lever mounted on the bracket. The lever worked in a slot in the target carrier; an almost identical mechanism is used to drive the targets on ground discs and point indicators. The newer mechanism has the advantage of simplicity, but means that the degree to which the disc comes 'off' depends on the travel of the signal wire. From the list of parts supplied by McKenzie and Holland in 1902 for a wall bracket disc (see page 90) it appears that the

STANDARD PLAN  
R 34-16  
NEW SERIES  
3. 2. 12. 37

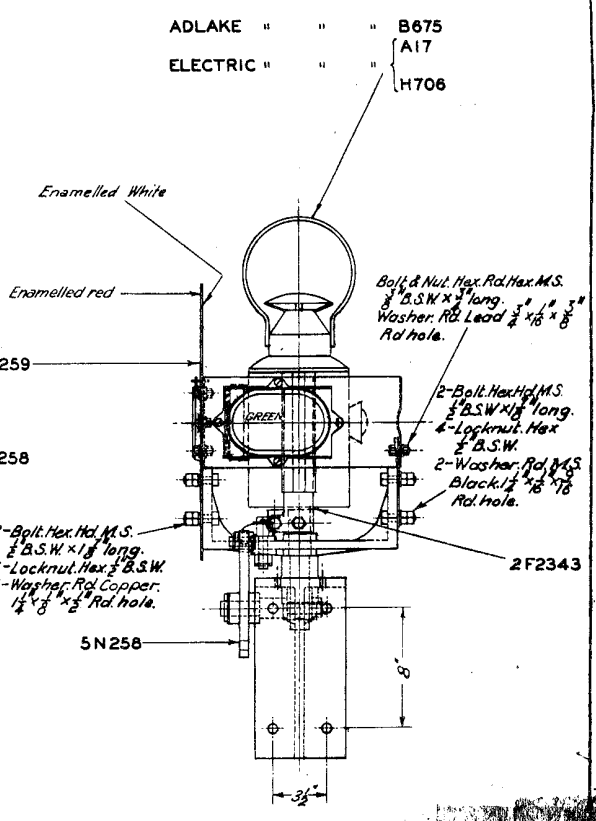
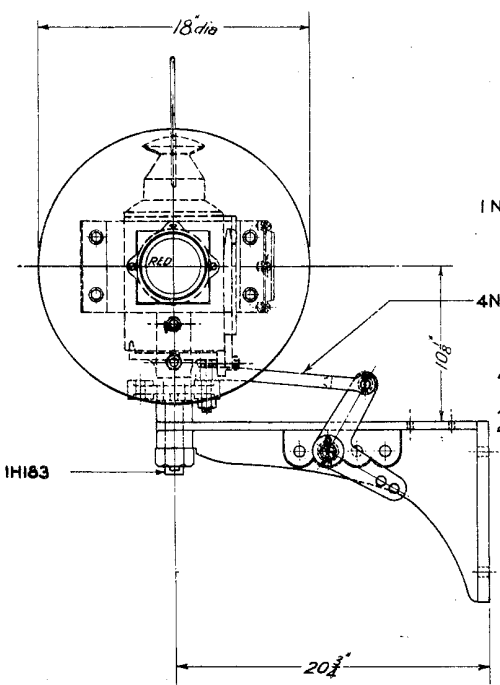
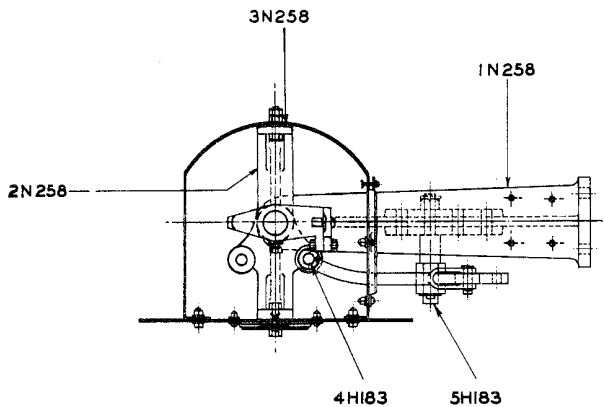
J3-3

WALL BRACKET DISC SIGNAL — I H 549

NO	NAME	MATERIAL	QUANTITY
1N258	Bracket	C.I.	1
2N258	Target Carrier	C.I.	1
3N258	Support	M.S.	1
4N258	Operating Rod Length as reqd	M.S.	1
5N258	Crank	M.S.	1
2F2343	Lamp Bracket	C.I.	1
1H183	Stud	M.S.	1
4H183	Stud	M.S.	1
5H183	stud	M.S.	1
1N259	Target (complete)		1
Stock	Bolt Hex Hd 1/2" B.S.W. x 1 1/2" long	M.S.	4
"	Self Screw 1/2 Whit Hex Hd - 3/2" long	M.S.	5
"	Locknut Hex 1/2" B.S.W.	M.S.	8
"	Washer Rd M.S. Black 1/4" x 1/8" x 3/8" Rd. hole	M.S.	2
"	Bolt & Nut Hex Rd. Hex 3/8" B.S.W. x 3/4" long	M.S.	1
"	Washer Rd Lead 3/4" x 1/8" x 1/2" Rd. hole	Lead	1
"	" Copper 1/4" x 1/8" x 1/2" Rd. hole	Copper	2

NOTE:- Lamp to be ordered separately.  
The Signal is assembled for use with the Adelaide lamp. If it is to be electrically lit Lamp Bracket 1F2324 will also need to be ordered.

NOTE:- To be assembled either L.H. or R.H. & for 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> or 4<sup>th</sup> Hole operation as required. Particulars to be given when ordering. Assembly as shown: I H 549, L.H., 3<sup>rd</sup> Hole.



WALL BRACKET DISC SIGNAL — I H 549

8-8-24 Alteration 1649	26-10-25 Alteration 1605	17-8-28 Alteration N° 578	21-10-41 Parts B675, A17, A293, A706 & F2343 added.	15-10-28 Alterations N° 312	VICTORIAN RAILWAYS DISC SIGNAL MECHANICAL WALL BRACKET TYPE H 549	Chief Engr Sign & Tele	Drawn From Sample	Approved by ECM
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*The wall bracket disc at Danger. Disc 13 (Post 33) at Ballarat B box controlled set back moves from the Down line to the four main lines through the train shed. The post and disc was provided on 22 December 1910; and when these photos were taken nearly 80 years later it is unlikely that either had been altered significantly since. The large red disc gives a clear 'on' signal during the day with a small glass in the centre of the disc giving a red light at night.*

older mechanism was still in use at in 1902. However, the new mechanism appears to have been in use by 1910 as shown by Disc 13 at Ballarat B. The only extant example of the older mechanism known to the author is at Belgrave (narrow gauge) on the Down Starting signal.

It is interesting to note that the design of the wall bracket disc is not failsafe as there is no provision for the disc to return to danger if it becomes disconnected from the down rod.

Discs may be lit by oil or electric lamp; the lamp being supported by the same stud on which the carrier rotates.

### History

Only fragmentary information of layouts has survived from before turn of the century. The following analysis is based primarily on a sample of surviving locking sketches. These can be difficult to interpret as they were often amended after being signed, and so the date can be misleading. However, it appears that post mounted disc signals were introduced into Victoria in 1889 and became standard practice in 1890 for moves from sidings.

When interlocking was introduced into Victoria in the late 1870s it appears that there was not any such concept as a shunting or siding signal. 'Important' movements were signalled using semaphore arms; these might be to or from what would be now called running roads or sidings. Other moves (e.g. across a crossover) were controlled by hand signal from the signalbox. By the middle 1880s shunting signals were appearing. The 1885 rulebook covered siding signals in two rules:

59. There may be an exceptional case where a Siding Signal is fixed on a Home Signal. In that case it will be very low down, with a very short arm, or some distinguishing mark. The top arm will always be for the Main Line and the lower one for Sidings [...]

75. Siding Signals. When the exit from Sidings is

controlled by Ground Disc or Dwarf Semaphore, no train or engine must leave the Siding unless the signal is turned off or lowered.

From these two rules we can infer that the provision of shunting signals for moves *into* sidings was uncommon as siding signals were not often mounted on the same post as a Home signal, and where it did occur the signal was a short semaphore arm. Short semaphore arms would also be used for moves *from* sidings where the siding signal was mounted on the same post as a main line signal. Signals from sidings could also be full sized arm (provided it was not on a post with a main line signal), a ground disc or a dwarf semaphore, although the rulebook is silent on exactly what form the later two signals took. Surviving locking sketches bear these inferences out and show that shunting signals were rare.

An official photograph of the east end of Flinders Street station reproduced in 'Steam Suburban' and dated 1884 shows a four doll bracket post with four ground discs mounted on the bracket. Curiously, this use of ground discs lasted until very recent times; two examples being the signalbridges at Geelong B and Bendigo B.

The first evidence I have of wall bracket discs mounted on posts is from the contract was gazetted to McKenzie and Holland on 5 August 1887 for the supply of interlocking equipment for 3 years from 1 January 1888. Item 19 in the schedule is 'Wall bracket signal, with lamp, complete as per drawing'. The price was £6/15/0. This can be compared with the price for ironwork and fittings for a single arm signal: Type A (almost certainly a somersault arm) was £7/10/0; and Type B (almost certainly a arm pivotted at the post) was £6/0/0. A ground disc was £5/5/0. The wall bracket disc was consequently more expensive than a ground disc or straight arm signal, but cheaper than a somersault signal.

Signalboxes commissioned in 1888 appear to continue





*Disc 13" turned off" for the locomotive of a Down passenger train to run around its train. The disc has not come fully off due to insufficient travel in the connection to the signalbox, but the intention is clear and at night the elongated green lens would give a clear signal at night. The arrangement of the downrod, crank, and operating rod can be clearly seen. The disc was oil lit and the lamp can be seen in the centre of the target.*

to use semaphores for shunting signals. For example, at Wangaratta (commissioned March 1888) six shunting signals were provided, all semaphore arms and all for moves from sidings. Redesdale Junction (commissioned January 1889) had one shunting signal, a semaphore for the move from the siding.

Post mounted discs appear to have been introduced early in 1889. The McKenzie and Holland proposals for the two boxes at Stawell (dated mid 1888) include post mounted discs. The VR locking sketches for the boxes (commissioned 7 March), although altered from the proposals, show that the discs were installed. However, boxes commissioned later in 1889 and early 1890 continued to use semaphore shunting signals. Examples include Ringwood Brick Siding (April 1889), Somerton (October 1889) and Waverley Road Junction (March 1890). Sandringham appears to be an unusual case. The McKenzie and Holland proposal had one shunting signal (a semaphore arm), but when commissioned in October 1889 the layout appears to have had two shunting signals - the second being a post mounted disc.

The following year appears to represent the sea change in practice. The boxes at Yarraville (February 1890), Hawthorn (February 1890), and Surrey Hills (August 1890) all have post mounted discs only. In all three cases shunting signals were only provided for moves from the sidings. No signals were provided for moves into sidings or any other shunting moves which continued to be controlled by hand signals. The discs are consequently a direct replacement for the semaphore shunting signals. The two boxes at Serviceton are a special case. It appears they were originally designed in October/November 1888 but not commissioned until May 1890 (due to conflicts with the South Australian Railways). They had a mixture of post mounted discs and semaphore arms.

The McKenzie and Holland proposal for Ararat A (dated May 1891) is interesting as it shows short semaphore arms

for moves into several sidings (the arms were mounted on the bracket post at the throat of the yard), but post mounted discs for moves out of the siding. The diagram for Ararat B (commissioned October 1891) shows two semaphore shunting signals. Remaining new boxes of the early 1890s tend to suggest that post mounted discs were standard. For example, Woodend (June 1891) had five discs, including one post with four discs. There were very few new boxes during the middle 1890s due to the depression, and it appears that after this hiatus no further semaphore shunting arms were installed.

Despite all this, the major change in the September 1891 rulebook was the deletion of the word 'ground' from rule 75. By the issue of the 1898 rulebook, shunting signals were described as:

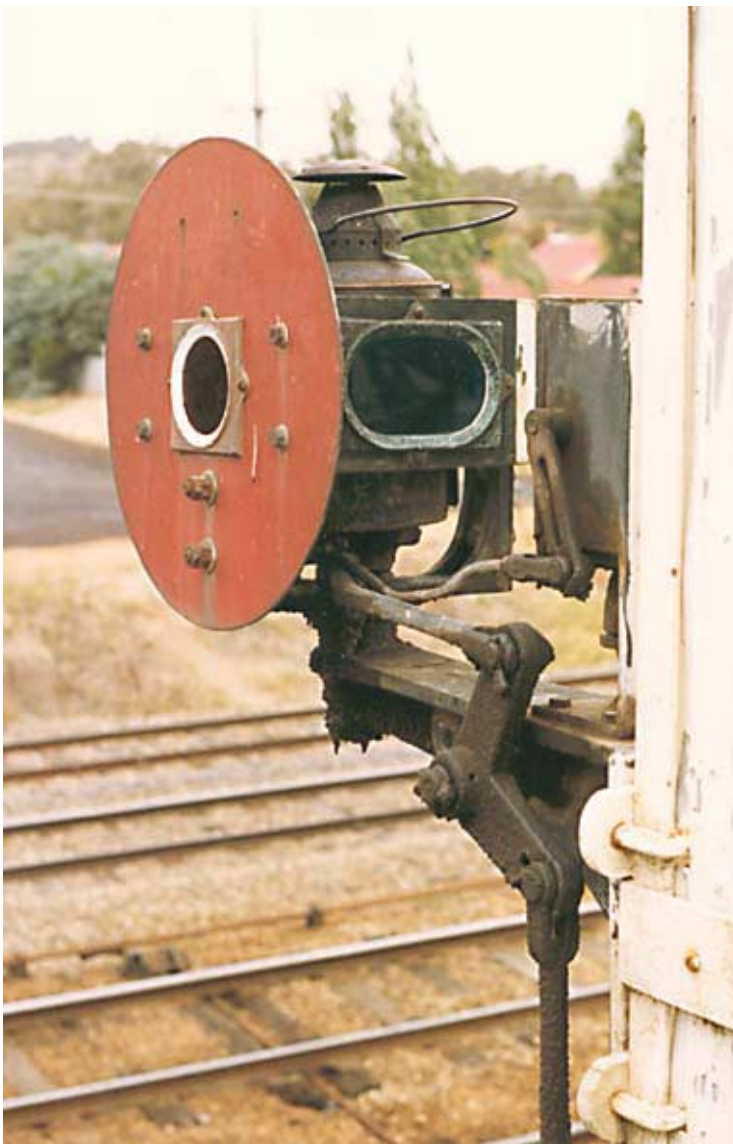
71. Siding, Shunting, and Set-back Signals. These are used for controlling the movements of trains whilst shunting. They consist of arms or discs fixed on posts, except where space cannot be found for a post when the discs are placed on the ground. These signals must never be passed when at Danger. A disc signal has two positions. In the day-time when at danger a red target is shown to an approaching train and at night a red light. The "All right" position is indicated by the red target being turned off; this operation shows a green light at night.

The 1898 interlocking contract let to McKenzie and Holland showed that a wall bracket disc (complete) was priced at £5/0/0; the same price as a ground disc (but the price for the wall bracket disc did not include the cost of the post itself). A somersault signal was cheaper than either disc at £4/10/0. The 1902 contract was very detailed, and the relevant schedule items are included in the table on the following page. The wall bracket disc had increased in price to £5/5/0, while the ground disc was still £5/0/0 and a somersault arm £5/0/0.

Disc 21 on Post 6 at Glenrowan controlled Up movements from the Siding to No 1A Road. The disc and post was provided in 1961 when the goods siding at the station was relocated to provide space for the Standard Gauge crossing loop (which can be seen in the background). There is very little difference between this disc and Disc 13 at Ballarat B despite the half century that elapsed between their installation. The rectangular box mounted on the bracket next to the mast is a circuit controller to indicate the position of the disc in the signal box.

Given these prices it is worth considering why the post mounted disc signal had been adopted. The UK railways, for example, either adopted semaphore shunting signals or some variety of ground discs. Either would appear to have been cheaper than the post mounted disc. One possible answer is that the ability to mount disc signals on both sides of a signal post meant that the total cost of a signal post was lower with disc signals than with semaphore signals. It may also have something to do with the complexity of the layouts (with a greater number of routes past each point) in use in Victoria, which would make ground discs less attractive.

(To be continued)



### Wall Bracket Disc Components (1902)

(from schedule to McKenzie & Holland's 1902 contract)

158	Wall Bracket Disc Signal, including Lamp, Item No 149; W.I. Target, Item No. 150; W.I. Shield, Item No 151; C.I. target carrier, Item No 152; C.I. lamp carrier, Item No 153; C.I. bracket, Item No 159; W.I. crank, Item No 160; W.I. connecting rod, Item No 161, and W.I. lever, Item No 162; fitted complete.	Each	5/5/0
149	Lamp for Disc Signals, Items No 148 and 158, fitted with one 4-in lens and one 1-in lens, complete, with glazed interior, well, and burner.	Each	1/10/0
150	W.I. Target for Disc Signals, Items No 148 and 158, fitted with brass glass frame drilled and provided with split pin, fitted with 1/2" bolt holes for carrier and shield	Each	0/4/6
151	W.I. Shield for Disc Signals, Items No 148 and 158, slotted, fitted with brass glass frame drilled and provided with split pin, fitted with bolts and nuts for target	Each	0/6/0
152	C.I. Target Carrier for Disc Signals or Point Indicator, Items No 148, 158, and 163, bored and faced for pillar stud, fitted for lever, either right or left hand, drilled and fitted with 1/2-in bolts, nuts, and lock nuts for target.	Each	0/10/0
153	C.I. Lamp Carrier for Disc Signals or Point Indicator, Items No 148, 158, and 163, bored for pillar stud, drilled, tapped, and fitted with 1/2" set screws	Each	0/2/6
159	C.I. Bracket for Wall Bracket Disc Signal, Item No 158, with W.I. 1 1/4-in crank stud turned, drilled, screwed, and provided with nut, split pin, and washers; and with W.I. 1-in lever stud, turned, drilled, screwed, and provided with nut, split pin, and washers; with holes for 5/8" bolts	Each	1/0/0
160	W.I. 5-in x 4-in Crank for Wall Bracket Disc Signal, Item No 158, bored for 1 1/4-in stud, and with each arm drilled for 5/8-in pin	Each	0/5/6
161	W.I. 3/4-in Connecting Rod for Wall Bracket Disc Signal, Item No 158, fitted at each end with 3/4-in joint, drilled for and fitted with W.I. 5/8-in pin, turned, drilled, and provided with split pin	Each	0/4/0
162	W.I. Lever for Wall Bracket Disc Signal, Item No 158, bored for 1-in stud, drilled for 5/16 in pin, and fitted for target carrier	Each	0/9/0