

SOMERSAULT

MAY 2007
Vol 30, No 3

SIGNALLING RECORD SOCIETY OF VICTORIA INC



Post U3 at Yarraville was a three position Dwarf mounted on a post to give maximum visibility to trains shunting in the sidings. By the time this photo had been taken in 1991 the sidings had been lifted, but the lead from the main line passed through the interlocked gates in the background, split into two sidings between the gates and the signal, and extended northwards to the Somerville Road bridge. The Dwarf showed three aspects: Stop, Low Speed Warning, and Clear Low Speed. The last aspect was quite common on three position motorised Dwarfs, like this signal, but went out of favour for some reason when the Victorian Railways commenced installing light Dwarf signals. The signal mechanism was a Style T2. This design originated with the Union Switch and Signal Coy of the US around 1911 and was a direct response to the General Railway Signal Co Style 2A mechanism introduced around 1908. The Style T2 came to Australia through the USS affiliations with the Westinghouse Brake & Saxby Signal Co Ltd of the UK and thence to its Australian subsidiary, McKenzie and Holland (Australia). Victoria used both the GRS Style 2A and the USS Style T2. The Style 2A was used for upper quadrant semaphores, while the Style T2 was used for Dwarfs, although both styles were used to work motorised lower quadrant semaphores. Curiously, while the Style 2A mechanisms are now extinct on the broad gauge, Style T2 mechanisms can still be seen at Kilmore East (on the co-acting Down Distant) and at Dandenong (on the Dwarfs). Style 2A mechanisms are still giving good service, of course, on Puffing Billy and, for the moment, north of the border in NSW.

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Published by the Signalling Record Society Victoria Inc (A0024029F)

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MINUTES OF MEETING HELD FRIDAY MARCH 16, 2007, AT THE SURREY HILLS NEIGHBOURHOOD CENTRE, 1 BEDFORD AVENUE, SURREY HILLS

Present: - J. Black, W. Brook, B. Cleak, G. Cleak, G. Cumming, G. Dunn, V. Findlay, C. Gordon, J. Gordon, W. Johnston, K. Lambert, D. Langley, S. Malpass, B. McCurry, A. McLean, T. Murray, T. Penn, B. Sherry, F. Strik & R. Whitehead.

Apologies: - N. Bamford, J.D. McLean, G. O'Flynn, L. Savage, P. Silva, S. Turnbull & A. Waugh.

Visitors: - Geoff Tasker.

The President, Mr. David Langley, took the chair & opened the meeting @ 21:11 hours, following the 2007 Annual General Meeting.

Minutes of the November 2006 Meeting: - Accepted as read. W. Johnston / S. Malpass. Carried.

Minutes of the February 2007 Meeting: - Accepted as read. W. Johnston / S. Malpass. Carried.

Business Arising: - Nil.

Correspondence: - Letter from Colliers explaining new arrangements for management of the lease for the rooms at Seymour.

Letter to Surrey Hills Neighbourhood Centre with bookings for meetings for 2007. F. Strik / B. Sherry. Carried.

Reports: - Nil.

General Business: - The Secretary provided an explanation for the late running of the membership renewal forms.

Keith Lambert provided an update on the re - signalling works between Broadmeadows - Craigieburn. The level crossing at Somerton is expected to be replaced by grade separation during April 2007. Signalling works are expected to be commissioned in May 2007. Extra sidings are to be provided at Craigieburn. The arrangements and works at Craigieburn were discussed. The control panel and Signaller at Craigieburn will have control of Broadmeadows and Somerton with Double Line Block working to Donnybrook.

Keith Lambert spoke about the recent proposal for remote control of Long Island Junction from Frankston.

Tenders have been called for the duplication from Clifton Hill - Westgarth.

Signals between Berwick - Pakenham are being converted to LED.

The next metropolitan grade separation project is expected to be at Taylors Road at Keilor Plains.

The stabling arrangements at Werribee were discussed. Overnight, three 3 - car trains are stabled in the back platform.

Brett Cleak supplied details of the re - signalling of the Down end of Menzies Creek with the work being completed in December 2006. A discussion of the arrangements at Menzies Creek followed.

Vance Findlay tabled diagrams of Essendon Junction in 1878 showing a proposal for interlocked gates at North Melbourne.

Glenn Cumming reported on the installation of boom barriers at Skipton Road, Lismore.

It was noted that Westinghouse had secured the contract for the replacement of Metrol.

Arrangements at Riggs Creek were discussed. Hand Signallers are on site for all crosses until further notice.

The arrangements at Benalla were discussed in detail.

Tom Murray discussed works at Middleborough Road. The crossovers at the Down end of Blackburn were "borrowed" and had to be returned soon after work was complete. Intermediate signals are to be renumbered because the old post numbers had been recycled.

The re - signalling works across New South Wales were discussed.

The accident at Grayrigg in the UK was discussed.

The level crossing accident between Worrinya - Forbes in New South Wales was discussed.

Meeting closed at approximately 22:20 hours.

The next meeting will be on Friday 18 May, 2007 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 9/07 to WN 13/07 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.

03.06.2006 **Menzies Creek** (A9/06)

On Saturday, 3.6., Up and Down Outer Homes were provided and the existing Up and Down Home signals were classified as Inner Homes. The Down Outer Home is on a new Post 1 situated 450 feet from the existing Down Home (renumbered Post 1A) and is worked by lever 1. The Up Outer Home is on a new Post 8 situated 459 feet from the existing Up Home and is worked by lever 14. Both Outer Homes are motor operated. 'Signal called' lights (under the block shelf) and needle repeaters (on the block shelf) were provided over levers 1 and 14.

The Outer Homes are not interlocked with any other signal. The Outer Homes will be automatically restored to stop when a train passes them and will remain at stop until the controlling lever is restored to normal and reversed again. The Outer Homes will be held at stop while the controlling track circuits are occupied. For the Down Outer Home this is 1TK extending from Post 1 and the Up end points, and for the Up Outer Home this is 13TK and 14TK extending from Post 8 to the School Road crossing. If the lever is reversed with the controlling track circuits occupied the 'signal called' light will illuminate and the signal will clear when the track is cleared. A departing train will place the Outer Homes to stop while the train occupies the controlling track circuit, but the Outer Home will automatically reclear after the train passes the Outer Home.

When Menzies Creek is unattended the Outer Homes are normally secured at Stop by lockable lever sleeves unless they are required to be cleared for a train. In this case the levers will be secured reverse. For the last train of the day, the Down Outer and Inner Homes are to be cleared and the Up Outer Home secured at stop. When trains are to cross under Guard in Charge conditions, both Outer Homes are to be cleared together with the Inner Home for the train expected to arrive first.

28.10.2006 **Menzies Creek** (A16/06)

On Saturday, 28.10., the Up end plunger locked points were converted to motor operation. New Posts 2, 3, and 4 were provided. Post 2 is a bracket post with four Down signals applying to No 2 Road (left hand doll) or No 1 Road (right hand doll). On both dolls the top arm is the Inner Home and the bottom arm a Calling On. All arms on Post 2 are motorised. Post 3 is an Up Home from No 1 Road to the main line, and Post 4 is an Up Home from No 2 Road to the main line.

The existing Down Inner Home signals (Post 1A) were removed. The WSA lever, plunger, point indicator, and rotary detectors were removed. The Stop Boards at the Up end of Nos 1 and 2 Road were removed. A dual control point machine was provided.

Lever 2 will operate both arms leading to No 2 Road. Lever 3 will operate both arms leading to No 1 Road. Needle repeaters and 'signal called' lights were provided above levers 2 and 3. The repeater will show ON when both arms are at stop, and OFF if either arm is clear. The Up end points are operated by lever 4. 'Point indication and availability' lights were provided over lever 4. A fortress key lock with the key engraved "Menzies Creek Lever 4" was provided on lever 4. This key can only be removed when the lever is in the centre notch when it can be used to release the hand operation of the point motor. Lever 5 will work the Up Home from No 2 Road. This signal is fitted with a short arm. Lever 6 will work the Up Home from No 1 Road.

Whenever lever 2 or 3 is reversed, the Home signal will clear if the track is clear to the fouling point at the Down end of the platform, and the Calling on otherwise. If the track subsequently becomes clear, the Calling On will return to Stop and the Home will automatically clear. When signalling an Up departure move under Guard in Charge conditions when the next move will be a Down arrival, the departure Home signal must be cleared before the levers operating the Outer and Inner Homes. The Outer and Inner Homes will remain at Stop, but the 'signal called' lights will illuminate. The Outer and Inner Homes will clear when the train clears the track circuits.

Lever 4 has five notches: normal, normal indication, centre, reverse indication, and reverse. The lever is moved to the indication notch until the points have moved and been detected, at which point the lever can be placed fully normal or reverse.

Track circuit 4T extends between Posts 2, 3, and 4.

14.12.2006 **Menzies Creek** (A 19/06)

On Friday, 15.12., the WSa lever, plunger, point indicator, and electrical contact box on the Down end points were removed. A dual control point machine was provided, but not commissioned. The points were secured to lie for No 2 Road.

15.12.2006 **Menzies Creek** (A 20/06)

On Saturday, 16.12., the Down end points were converted to motor operation. New Posts 5 & 6 were provided. Post 5 is a Down Home from No 1 Road to the main line, and Post 6 is a Down Home from No 2 Road to the main line.

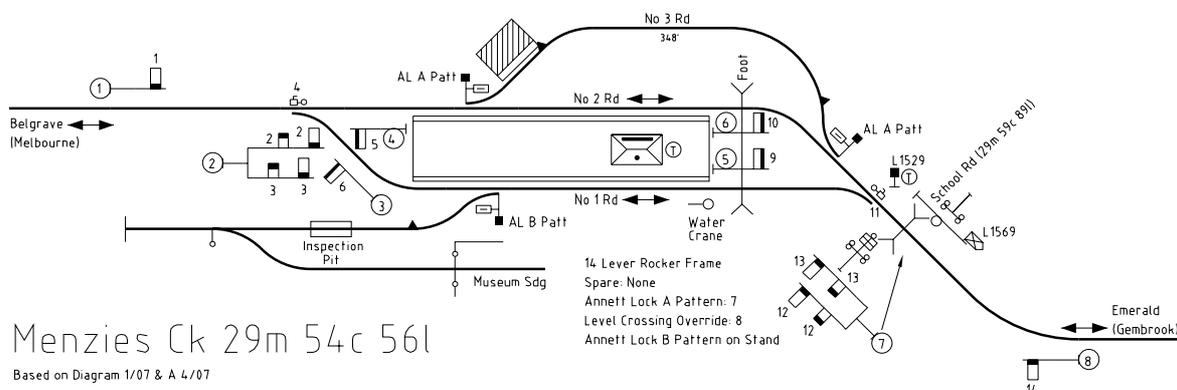
The rotary detectors and wire operated circuit controllers for Homes & Calling Ons 12 and 13 will be removed. The Stop Boards and Approach Section Boards at the Down end of Nos 1 and 2 Roads will be removed. A new Up Approach Section Board was provided.

Lever 9 will work the Down Home from No 1 Road. Lever 10 will work the Down Home from No 2 Road. The Up end points are operated by lever 11. 'Point indication and availability' lights were provided over lever 11. A fortress key lock with the key engraved "Menzies Creek Lever 11" was provided on lever 11. This key can only be removed when the lever is in the centre notch when it can be used to release the hand operation of the point motor.

When signalling a Down departure move under Guard in Charge conditions when the next move will be an Up arrival, the departure Home signal must be cleared before the levers operating the Outer and Inner Homes. The Outer and Inner Homes will remain at Stop, but the 'signal called' lights will illuminate. The Outer and Inner Homes will clear when the train clears the track circuits.

When operating under Guard in Charge conditions and the next move is to be a cross, the signalling can operate automatically for the arrival of the next train. Before departing, the Signaller is to set the points for the departing trains, ensuring that each end of the yard is set for a different road. The departure Home signals are to be cleared for the departing trains, then the Inner Homes and Outer Homes. The 'signal called' lights will illuminate. The Outer Home signals will remain at Stop and will clear after the departing train has passed them. The Inner Homes will remain at Stop until the first arriving train passes the Outer Home. The appropriate Inner Home will then clear to admit the first train to the platform. Once the first train is clear of the points, the Inner Home for the opposing train will automatically clear. The Guard of the first train will proceed to the signalbox to act as Signaller. This allows trains to arrive out of order and ensures minimum delay.

When locomotives are being transferred at the Down end of the yard, the first locomotive is to proceed past the Up Approach Section Board. This will allow L1569 to go to proceed and permit the normal operation of the flashing lights at School Road for the second locomotive. The second locomotive can then be signalled back onto its train, and the first locomotive can return to wait at the Inner Homes.



13.02.2007 **Emerald** (A 1/07)

On Tuesday, 13.2., the Up Approach Track will be extended to commence 495 feet in the rear of the Up Home.

21.02.2007 **North Geelong C, Murtoa, Dimboola, Wodonga A, Wodonga Coal Sidings** (SN 397/07)

From 0001 hours Wednesday, 21.2., these boxes must only be switched in to allow a movement to enter or leave the main line, after which they are to be switched out.

(06.03.2007) **Ararat** (SW 40/07, WN 9)

A signaller must be on duty at Ararat when an Absolute Occupation or Track Warrant is to be granted on the Ballarat line and the Train Staff is to be delivered at Ararat.

(06.03.2007) **Leawarra - Stony Point** (SW 48/07, WN 9)

Diagram 44/07 (Leawarra - Stony Point) replaced 16/05 as in service.

09.03.2007 **Emerald** (A 3/07)

On Saturday, 9.3., an Up Approach Bell was provided in the Safeworking Cabin. It will operate whenever an Up or Down train occupies the Approach Track.

11.03.2007 **Narre Warren - Berwick** (SW 51/07, WN 10)

On Sunday, 11.3., Homes 28 & 32 and Down Automatic D1387 were converted to LED.

ORMOND

The second station on the Frankston line is Ormond, situated 8 miles 39 chains 51 links from Melbourne. The early history of Ormond was almost identical to that of neighbouring Glenhuntly.

Ormond was opened for passenger traffic with the line, on 20 December 1881 (the first day of public traffic, the official opening had been the previous day). Like many of the other stations on the line, the station was imaginatively named 'North Road' after the road that crosses the line just south of the platforms.

The Service Time Table of 2 February 1882 notes that North Road was open for passengers only, but was equipped with a carriage dock. A contract was gazetted on 17 February 1882 for the erection of station buildings. The contract was let to E. Cholerton for £750/0/0 and the buildings were of the same design as a number of other stations on the line (including Glenhuntly and Frankston). By December 1885 the Working Time Table notes that North Road was open for light goods. The Argus for 5 December 1881 noted that gatehouses had been provided at all roads between Caulfield and Mordialloc ready for the official opening, including North Road. By 1 December 1882 permission had been granted to close the gates at North Road across the rails after the passage of the last train each day. The gates were worked by the traffic branch.

No safeworking was shown for the line until the 3 April 1882 Service Time Table, but as there were just 4 trains each way each day, perhaps it was felt there was not any need for any such sophistication. By 3 April 1882, however, Staff and Ticket working had been provided on the line and North Road was a staff station working with Glen Huntly Road and East Brighton (Bentleigh). The railway was duplicated between Caulfield and Mordialloc on 9 December 1888 and Double Line Block replaced Train Staff and Ticket. The safeworking sections were unchanged with the sections being Glen Huntly Road - North Road - East Brighton.

On 14 November 1894, the station staff at Ormond were reduced. The station was now only staffed from 0800 to 1700 Monday to Saturday, and for all trains on Sunday. This was basically one shift each day, and the Weekly Notice stated that arrangements would be made to relieve the stationmaster every second Sunday! Outside these hours the Guard of each train was responsible for looking after passengers. In addition, North Road was closed for goods traffic and the carriage dock disappears from the Working Timetable.

The reduction in staff meant that North Road was closed as a block post. The new section was Caulfield B - East Brighton. The Starting signals appear to have been abol-

ished, but the Home signals remained in use to protect trains standing at the platform. The normal position of the Home signals was 'All right' and they were to be lit at night. The crossover was abolished.

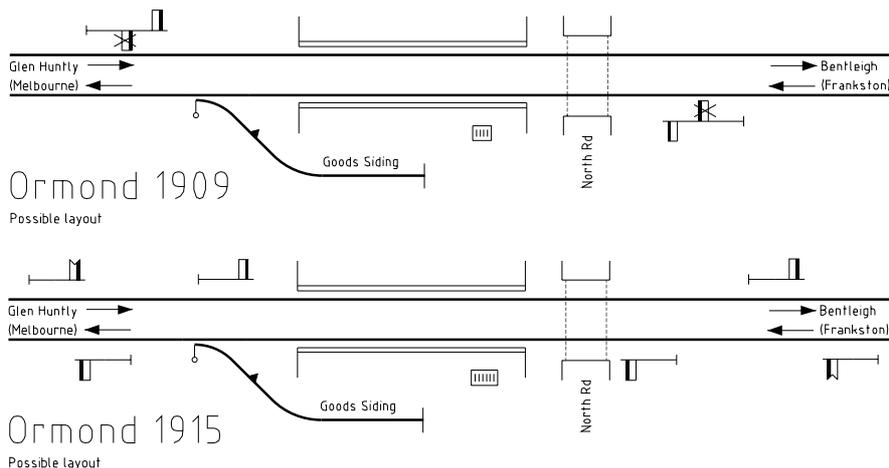
Just under a month later, on 10 December 1894, North Road was re-opened for light goods. The Weekly Notice stated that the siding trailed into the Up line. As no crossover was provided, trucks on Down trains were to be taken on to East Brighton and returned by the first Up Goods train. Given the local geography, it is almost certain that the siding was situated behind the Up platform and trailed into the Up line.

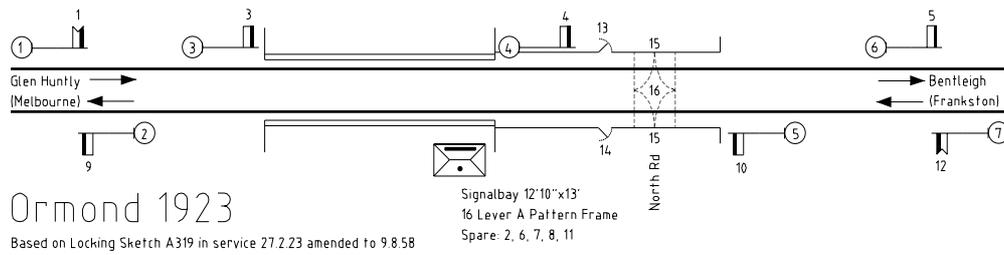
The station was renamed Ormond on 1 September 1897. At the end of February 1905 Ormond was opened for goods in truck loads, in addition to light goods. On 8 August 1908 the Guard in Charge working was cancelled and Ormond was staffed for all trains. On 1 September 1909 the SM Glen Huntly gained supervision of Ormond. By December 1909 Ormond was being worked under Caretaker conditions, probably by Lad Porters or (women) Caretakers as all goods and parcels traffic had to be prepaid inwards and 'to pay' outwards. It was still open for goods in truck loads and light goods. In October 1911 a man was placed in charge of Ormond and the station henceforward was worked under ordinary conditions (that is, goods and parcels could be sent 'to pay' and prepaid for outwards traffic).

On 13 September 1909 starting signals were provided. These were almost certainly located on the same posts as the Home signals and were normally crossed. The provision of starting signals probably marks the re-establishment of Ormond as a block post. By December 1909 Ormond was noted in the Working Timetable as being switched in as a block post "on special occasions". In late February 1913, Weekly Notice 13 noted that Ormond would remain open as a block post on Sundays until the 2024 Up Frankston clears. The December 1913 Worker shows that Ormond was still only open "on special occasions" during the week, but on Sundays was open as a block post from the arrival of the 1000 Down until the 2023 Up Frankston train cleared around 2120.

By 1 October 1912 the North Road gates were attended to by a Class 2 Female Gatekeeper with a Class 4 Assistant. By 1 July 1913 Ormond had a Class 9 Stationmaster.

At the beginning of March 1915 the signals were rearranged. The Down Home replaced by a new post 110 yards closer to the platform. The Down Starting was relocated to the left hand side of line opposite its original position, probably from the former Down Home signal post. The Up Home was similarly replaced by a new post 100 yards further in





and the Up Starting similarly relocated. At the beginning of November 1915 Up and Down Distant signals were provided. From the 5 December 1915, Ormond was (once again?) open as a block post every Sunday from the time the 1000 Down cleared until the 2023 Up Frankston cleared. The Weekly Notice specifically mentioned that the crosses were to be removed from the starting signals before switching in and replaced after switching out. By December 1916, however, Ormond was once again noted as only being switched in on special occasions. In late June 1920 Ormond was finally switched in as a block post daily.

The overhead between Glen Huntly and Mordialloc was energised around the 4 April 1922 and the electric service to Mordialloc was introduced as from 6 June 1922. At roughly the same time, from 1 June 1922, Ormond was closed for goods and the siding was removed.

In the '20s the Victorian Railways had an active program of upgrading level crossing protection, particularly in what was then the developing outer suburbs. On 27 February 1923 the hand gates at North Road were replaced by interlocked gates. A 16 lever A pattern (tappet) frame was provided in a new signalbay on the Up platform. The only change to the signals was the provision of a Down Home protecting the level crossing, however, the signal posts were numbered for the first time. Ormond was now a block post for all trains and the block switch was removed.

In 1928 McKinnon, too, was provided with improved level crossing protection and an interlocked frame. This resulted in two minor changes at Ormond. A distant for McKinnon was provided on Post 6 on 9 February 1928, and Ormond's Up Distant was relocated 110 feet further out on 14 February 1928.

There were no further signalling alterations at Ormond until well after the second world war. On 13 June 1954 controlled wickets were provided on the Down (south) side of North Road. Normally, where 4 wickets are provided at an interlocked level crossing, the two wickets on the same side of the line are worked by one lever. Unusually, however, the additional wickets at Ormond were worked by

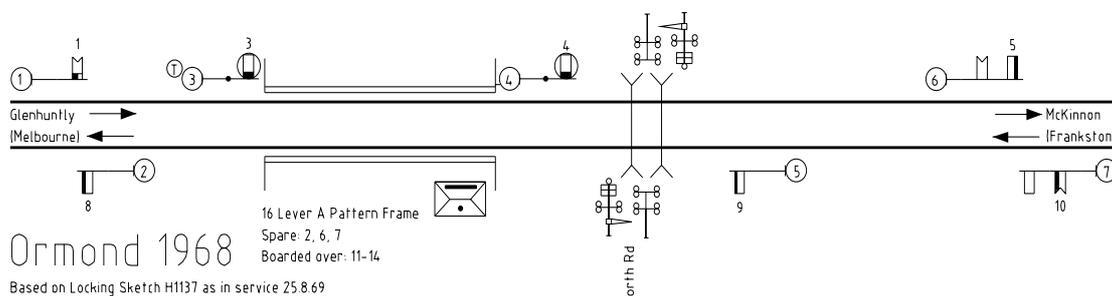
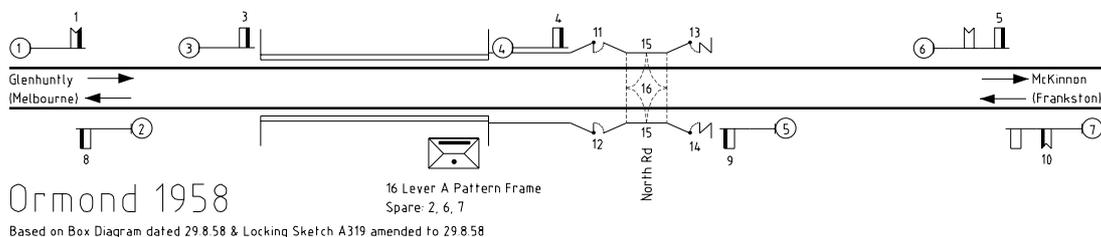
separate levers. This meant that there were 4 wicket levers in the frame and the Up signal levers were renumbered. The heavy wooden 'slamming' type of wickets were replaced by light tubular steel and mesh wickets on 29 September 1958. These wickets normally stood open for pedestrian traffic and were closed when the signalman reversed his levers.

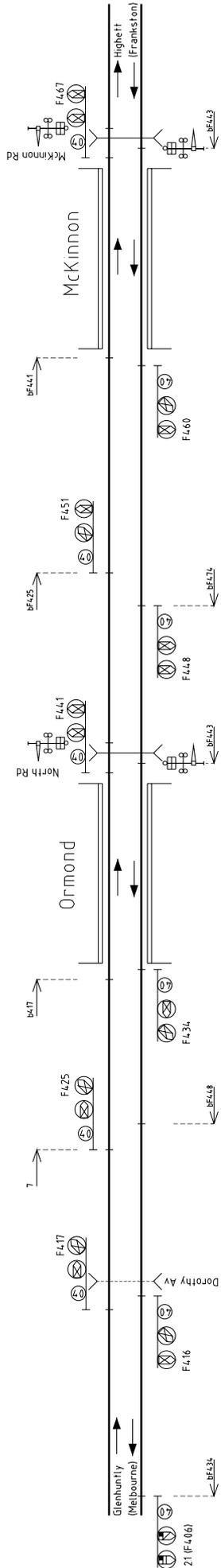
A decade later and the interlocked gates at North Road were replaced by boom barriers on 22 September 1968. This allowed the North Road level crossing to be widened to a dual carriage way. Unlike many other level crossings, where the boom barriers (or flashing lights) were manually controlled by a lever in the signalbox, at Ormond the new boom barriers were controlled solely through the track circuits and contacts on the signal arms. In order that the boom barrier timing would work correctly for both non-stopping and stopping trains, the Down Home Arrival and Down Home Departure (sic) were converted to two position light signals and express/stopping pushbuttons were provided at Glenhuntly and Ormond. The gate wheel, gate stop lever, and all four wicket levers were removed from the frame and the space boarded over. Switch out facilities were provided once again at Ormond and Ormond was henceforward only open during the peak hours. The initial block hours were Monday - Friday 0620-0900 & 1532-1825 and Saturday 0730-0915 & 1200-1340.

A very small number of alterations took place over the next six years. On 7 December 1969 Post 2 was relocated 100 feet further out from the platform. CSEE jointless track circuits were provided on 10 December 1973, and on 20 May 1974 the insulated joint in the Down line on the Down side of North Road was relocated 29 feet in the Up direction to reduce delays to road traffic - presumably to finish the boom barrier cycle earlier.

By 23 November 1973 the block hours had hardly changed, being 0700-0900 & 1532-1825 (M,Tu,Th,F) & 0700-0920 & 1532-1825 (W). The slightly longer hours on Wednesday were due to the passage of the Frankston goods.

Between 1974 and 1976 the lines between Glenhuntly





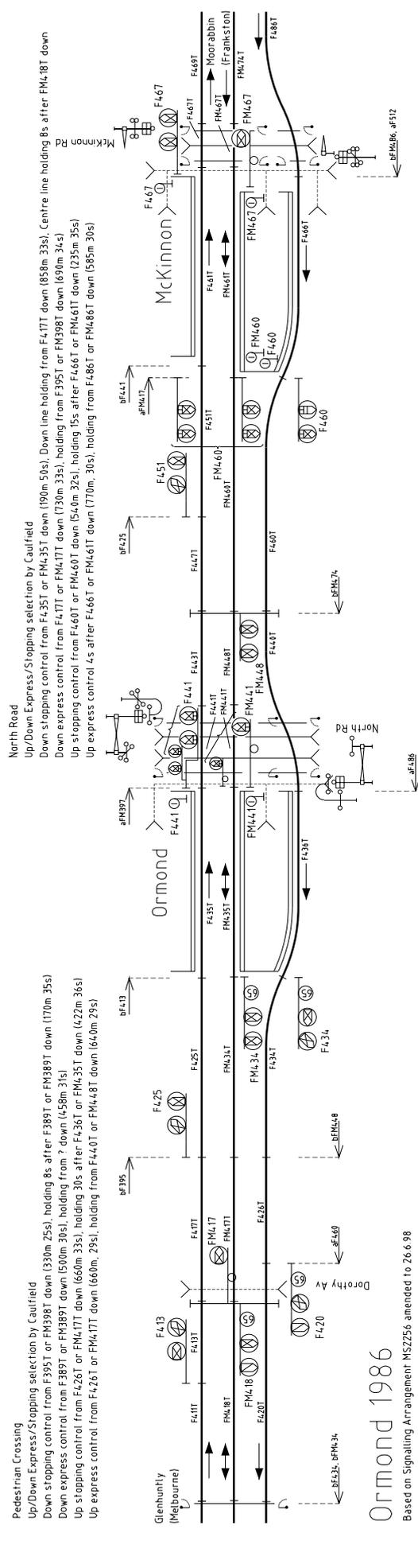
Ormond 1978

Based on Signalling Arrangement RHI314, in service 24.11.74

North Road

Express/stopping selection by pushbuttons at Glenhenty and Cheltenham
 Down stopping control 10s after platform track occupied, holding 10s after train passes F4.17
 Down express control when train passes F4.17 (24.50', 28s@60mph), holding 12s after train passes Home 7 at Glenhenty (2210', 30s@35mph)
 Up stopping control 15s after train passes F4.60, holding 23s after train enters McKinnon platform
 Up express control 29s after train enters McKinnon platform (2530', 29s@60mph), holding when train enters Benfleigh platform (2650', 30s@60mph)

F4.4.8 is approach operated from start of holding section



Ormond 1986

Based on Signalling Arrangement MSZ256 amended to 26.6.98

Pedestrian Crossing

Up/Down Express/Stopping selection by Caulfield
 Down stopping control from F395T or FM398T down (330m 25s), holding 8s after F389T or FM389T down (170m 35s)
 Down express control from F389T or FM389T down (500m 30s), holding from ? down (458m 31s)
 Up stopping control from F426T or FM417T down (660m 33s), holding 30s after F436T or FM435T down (422m 36s)
 Up express control from F426T or FM417T down (660m, 29s), holding from F440T or FM448T down (640m 29s)

North Road

Up/Down Express/Stopping selection by Caulfield
 Down stopping control from F435T or FM435T down (190m 50s), Down line holding from F417T down (858m 33s), Centre line holding 8s after FM418T down
 Down express control from F417T or FM417T down (730m 33s), holding from F395T or FM398T down (690m 34s)
 Up stopping control from F460T or FM460T down (540m 32s), holding 15s after F466T or FM466T down (235m 35s)
 Up express control 4s after F466T or FM466T down (170m, 30s), holding from F488T or FM488T down (585m 30s)

F4.1 & FM4.1 interlocked with boom barrier.

Stopping train & booms vertical: clears when booms horizontal & platform track occupied
 Stopping train & booms horizontal: clears when holding section occupied
 Express train: precleared by progression system
 Express train: precleared by progression system
 5P keyswitch normal to reverse: interlocked with booms when control or holding sections occupied
 Train until the first train has occupied FM4.34T

FM4.8 interlocked with boom barrier.

Stopping train: clears when FM4.6IT is occupied
 Express train: precleared by progression system
 Up holding and part of the control cut out for a following
 Train until the first train has occupied FM4.34T

F4.60 & FM4.60 interlocked with North Rd boom barrier.

For stopping train when booms vertical: clears when platform track occupied for 20s
 For stopping train when booms horizontal: clears when holding section occupied
 Express train: precleared by progression system
 5P keyswitch normal to reverse: interlocked with booms when control or holding sections occupied

and Moorabbin were rebuilt in preparation for the provision of a third track. Work commenced at Ormond with the slueing of the Down line on 3 November 1974 between 8 miles 500 metres and 8 miles 840 metres (these distances are the strange hybrid imperial/metric system adopted by the Victorian Railways until metric distance posts replaced the original mile posts). The line was slued to the Down side of the existing line and a new Down platform was brought into use behind the existing platform. Post 4 was relocated to new alignment.

Three position signalling replaced the double line block working between Glenhuntly and Bentleigh on 10 November 1974. Ormond was closed as block post and the mechanical frame abolished and all two position signals were abolished. The new automatic signalling was designed for an express speed of 60 mph (100 km/h). It had 4 aspects and, according to the litho and the signalling arrangement drawing, all signals were equipped with a '40' indicator to allow a medium speed of 40 mph. However, it is possible that the '40' indicators were not brought into use until March 1976.

Slueing of the Down line allowed the original Down platform to be removed. A new Up line was constructed in its place, and on 15 December 1974 the Up line was slued between 8 miles 500 metres and 8 miles 840 metres. A new Up platform was brought into use, which was the eastern face of the current island platform. Automatic F434 was relocated sideways.

On 21 March 1976 a new Down track was provided between Ormond and Bentleigh. Automatics F451, F467, and F479 located as shown on Diagram 8/74 - presumably they were all just shifted sideways. According to the Weekly Notice, the 40 mph medium speed qualifying lights were only now commissioned for the Up and Down signals in the section. On 8 September 1976 the boom barriers on the east side of North Road level crossing were relocated due to the (planned) provision of the third track. The Up line between Ormond and Bentleigh was slued to a new alignment (the former Down line) on 10 October 1976. Automatics F448, F460, F474, and F486 were relocated to the new alignment.

Here work on the third track stopped for nearly a decade.

On 2 September 1982 a 5P keyswitch labelled 'O.D. LOADS' was provided to control Automatics F441 and F448. This keyswitch could be operated to hold the signals at stop for the passage of over-dimensional loads (which might take longer to clear the level crossing than normal traffic), but did not control the boom barriers. Presumably, the booms were latched up for the passage of an OD load.

Work on the triplication recommenced in the mid 1980s. The new Down line between Glenhuntly and Ormond was brought into use sometime between October 1986 and February 1987, probably in conjunction with the issue of Diagram 55/86. Unfortunately, the Weekly Notice is unaccountably silent on the matter. The former Down line became the new Up line and the lines were resignalled. New masts were provided for all signals at slightly different locations and all '65' indicators were removed. The signals on the Up line were renamed 'FM' and would become the Up signals on the future Centre line. A pedestrian crossing with pedestrian gates provided between Glenhuntly and Ormond.

On 21 February 1987 it was the turn of the section between Ormond and Bentleigh. Again all the signals were replaced by new masts in slightly different positions. A co-acting signal was provided for F441. A 5P keyswitch was provided on the Down platform to control F441 and the OD keyswitch was probably removed. Pedestrian gates at North Road had been provided by this date.

The signalling on the new Up line was brought into service on 27 June 1987 and it was opened for traffic as from 0600 hours the following day. The former Up line (now the Centre line) was concurrently taken out of use. On 5 July 1987 the Centre line was restored to use as a bi-directionally signalled line.

There have been few modifications in the twenty years since then. New boom barrier masts were provided at North Road on 31 March 1996. The co-acting signals for F441 and FM441 were fitted with LED lights on 13 May 2006. At some time between 1987 and 2005, the 5P keyswitches for F441 and FM441 were removed.

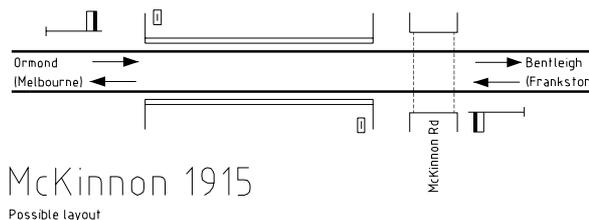
McKINNON

McKinnon, 9 miles 0 chains 2 links, was opened for passenger traffic on 1 September 1884 as McKinnon Road. There were gates at McKinnon Road since at least December 1882. The contract for the erection of the passenger station and platform had been gazetted as having been let to H. Sterling on 19 January 1883 for £421/16/4. At this time the Frankston line was single and McKinnon, not being open as a Staff station, would have consisted of a single platform on the side of the line. On 14 December 1885 the station was renamed McKinnon, the name it retains today.

The line between Caulfield and Mordialloc was duplicated on 9 December 1888. In preparation for this a contract had been gazetted on 25 May 1888 for the erection of a platform facing at McKinnon. The contract was for £236/10/0 and was let to T. Colebrook. McKinnon was not opened as a block post upon duplication, and was consequently probably only provided with Up and Down Home signals.

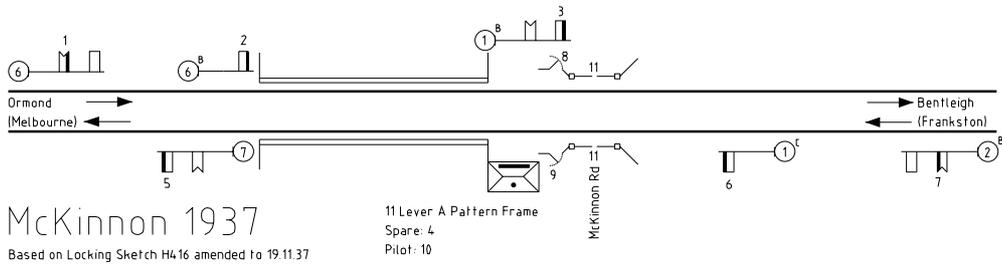
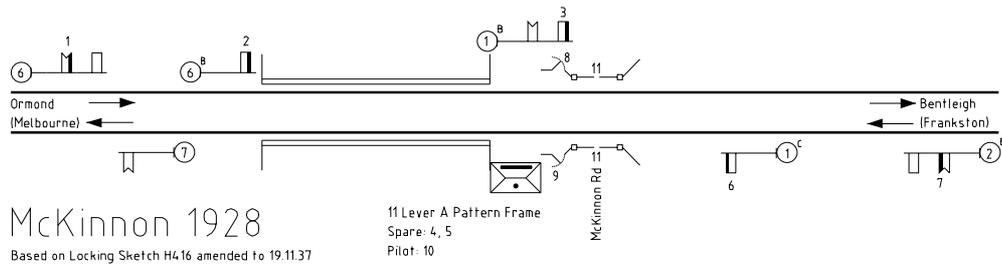
Like Glenhuntly and Ormond, the station staff was reduced at McKinnon as from 27 December 1894. The station was not staffed before 0800 or after 1900 Monday - Saturday (but it was staffed for all trains on Sunday). The Guards were instructed to deal with passengers when station was not staffed. The Guard in Charge working remained in force until early August 1908. As from 1 September 1909, McKinnon was supervised by the SM Bentleigh.

McKinnon definitely had Up and Down Home signals



by 1 July 1899, but the arms and spectacles were removed on 15 August 1905. They were reinstated on 2 February 1915, but whether these were on the same masts the Weekly Notice doesn't say.

Signalling wise, McKinnon became substantially more interesting when mechanical boom gates were provided at McKinnon Road on 9 February 1928, replacing the hand gates. These were worked from an 11 lever A pattern frame installed in a signalbay on the Up platform. The boom gates were worked from an ordinary gate wheel. A pilot lever (effectively the normal gate stop lever) was provided to interlock the 'boom' wheel with the signals. A Down Distant was provided underneath Ormond's Down Starting signal (Post 6), and an Up beneath Bentleigh's Down Starting. A new Down Home was provided at the Down end of the platform to protect the level crossing and Bentleigh's Down Distant was placed beneath the Home.



Since McKinnon was the only example of a mechanically operated boom gates in Victoria, some comments on them would not be out of place. Four boom gates, each 14'9" from pivot to tip were provided. When the gates were down they completely closed the road. Each boom gate was of composite timber and steel construction with a central vertical 1/4" steel plate flanked by two oregon flitches. A steel lattice was hung underneath the boom. This consisted of 14 vertical droppers at 12" centres, and 3 horizontal straps. The boom and lattice were counterbalanced by a large cast iron weight which was located on two MS straps. Each boom was mounted on a standard constructed out of mild steel angles and 1/2" plate. On the top of the standard was located two 2" plain bearings in which the boom spindle worked. The operating crank and the boom were both keyed to the spindle.

According to the Annual Report, it was expected that the booms would be cheaper to install and require less maintenance. Some idea of the issues with the boom gates can be obtained from this memo from W.E. Baxter, SM, to staff on 19 December 1931:

Working of Boom Gates

I wish to impress upon staff the necessity of using the utmost care whilst working these gates. When putting gates down for the passage of trains, keep a sharp lookout for road traffic and pedestrians, who may be using the roadway. People are constantly crossing under these gates and it behoves us to be extra vigilant.

When lifting gates be careful to see that no one is in front of the gates. As these gates fold up (scissor fashion), it will result in serious injury should a person's hand be caught.

Children must not be allowed about the gates. Let us be watchful at all times. [...]

It appears that McKinnon was not made a block post despite the provision of the boom gates. The WTTs of 1929

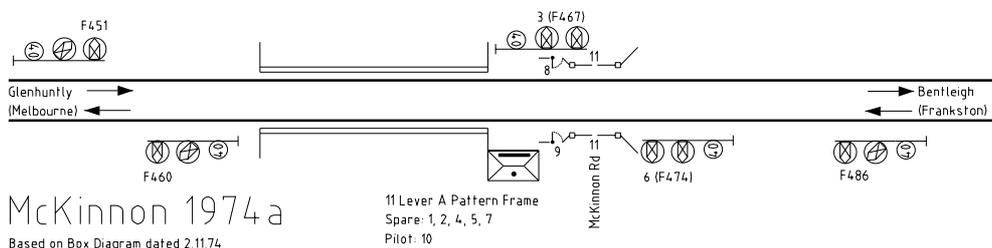
and June 1936 show that the block section remained Ormond - Bentleigh. On 19 November 1937 Post 7, the Ormond Up Distant, was relocated 8 yards further out and an Up Starting signal (Home 5) provided on the post. This suggests that McKinnon was a block post at or around this time. By the time the next WTT was issued on the 29 November 1937, McKinnon was a block post with the sections Ormond - McKinnon - Bentleigh. It was switched in 0746 to 0842 and 1728 to 1824 (Monday to Fridays) and 0746 to 0842 (Saturday).

The wickets were replaced by normally open wickets on 18 August 1964.

The block hours as at 23 November 1973 were 0700-0848 & 1623-1840 (M,Tu,Th,F) and 0700-0920 & 1623-1840 (W). The extra time on Wednesday was due to the running of the Frankston goods on that day which left Caulfield at 0901 and arrived at Cheltenham at 0921.

The interlocking at McKinnon was abolished in two separate phases. On 10 November 1974 the double line block working between Ormond - McKinnon - Bentleigh was replaced by three position automatic signalling. The mechanical boom gates and wickets were not abolished, however, and two of the new light signals were controlled by the mechanical frame. The mechanical boom gates were finally abolished on 24 November 1974 and conventional boom barriers were provided. The mechanical interlocking was abolished at this time.

The Down line was slued through a new Down platform, located behind the original platform, on 21 March 1976. Automatics F451, F467, and F479 were relocated to the new alignment and the '40' 'medium speed qualifying signals lights' shown on Diagram 8/74 were commissioned. The Up line between Ormond and Bentleigh was slued to the alignment of the former Down line on 10 October 1976. Automatics F448, F460, F474, and F486 were relocated to the new alignment. The new Up platform was an island platform (with only one face in use) located 50 metres in the



Up direction. This provided space for the ramp to the pedestrian subway. It is interesting to note the differences in pedestrian access at Ormond, McKinnon, and Bentleigh. Although these are adjacent stations, rebuilt at the same time, the pedestrian access is completely different. At Ormond, access to the island platform is via a subway. A foot crossing is provided at North Road, but this cannot be used to access the platform. At McKinnon, access to the island platform is via either the subway, or via the foot crossing. At Bentleigh, no subway is provided and access is only via the foot crossing at Centre Road.

After the slueing of the Up and Down lines the provision of the third track ceased and did not recommence for a decade. At McKinnon the first signalling alteration in connection with the new third track was the resignalling of the Up and Down lines on 21 February 1987. All of the posts between Ormond and Bentleigh were renewed, although at

slightly different locations. The signals on the Up line were prefixed 'FM' and would become the Up signals on the Centre line in due course. A co-acting signal was provided for FM460, and posts FM488 and FM474 were located on signal bridges. The '65' indicators were removed from all posts. Pedestrian gates were provided at McKinnon Road, together with 5P keyswitches to control F467 and FM460. On 27 June 1987 the signalling on the new Up line was commissioned. Trains commenced using the new Up line on the following day and the former Up line (now the Centre line) was taken out of service. On 5 July 1987 the Centre line was restored to use as a bi-directionally signalled line.

Since that time the modifications to signalling have been minor. The 5P keyswitches on the platforms to control F460, FM460, F467, and FM467 have been abolished at some time between 1987 and 2005.

NSW boom gates

In Australia, mechanical boom gates appear to have been introduced by the New South Wales Railways in 1913 at John's Street, St Peter's, on the Illawarra line. These were considered successful and became the standard form of interlocked gate. The second set were installed at Metford (near Newcastle). These were followed by Murray Street (Darling Harbour) (1921), Darling Island (1921), Villawood Crossing (1922), Maitland Rd, Hexham (1928), Railway St, Newcastle (1929) and Dog Trap (1929). All of these were worked using the standard gate wheel.

The disadvantages of the conventional swinging gate were the physical effort required to operate the gates, particularly in windy weather and for long gates. Gate stops were required in the roadway, where drainage and maintenance were a considerable problem. Repairs and renewals to the gatestops required opening the road surface. Boom gates also required less space than swinging gates, and, the vertical action meant that a considerable speeding up of road traffic occurred.

The original gates consisted of simple oregon booms 16 feet long mounted on wooden pedestals and working in plain bearings. A counterweight was mounted on two mild steel straps bolted onto the boom. The boom was worked by a flat pulley mounted on the spindle and a light fringe was fitted. A hook was provided to secure the gate down. Experience showed that some form of lock was necessary to prevent people from raising the boom when it was closed to road traffic.

As larger and heavier road vehicles appeared, the incidence of broken booms increased. A new design with the

booms constructed of light steel angles was adopted. Unfortunately, this type of gate bent when it was hit, often to the extent that it fouled the structure gauge. It also normally required workshop attention for repair. The solution was to adopt a composite boom, in which a short length of channel section was provided at the pedestals into which oregon flitches were bolted. This arrangement avoided damage to the bearings etc when the boom was hit, while the flitches could be easily replaced on site.

A fringe was provided under the gate to prevent children or small animals passing under the boom. The fringe consisted of MS droppers (spaced around 12" apart) and a light horizontal angle at the bottom. A link to the drive was provided to ensure the droppers were always vertical and to eliminate any swaying as the boom was raised or lowered.

The counterweight was adjustable in the vertical and horizontal direction to obtain the correct balance. The vertical adjustment was added to prevent bouncing when the 'all steel' booms were lowered. The balance was worked out for each boom gate and counterweights cast to suit. The balance was initially adjusted in the workshops.

Until 1929 the conventional gate crab was used to operate the booms, but this was found to cause difficulties in controlling the booms due to the lost motion in the connections and the slop in the gears. A screw mechanism was developed to give much finer control and adopted as standard from 1935. The first set was at Parramatta Rd, Clyde.

The information in this section was taken from 'Interlocked Boom Gates', H.F. Hall, Proc IRSE 1950, p227-224.

1881 INSTRUCTIONS TO SIGNALMEN

Approved by the Board of Lands and Works, 8th September 1881:-

Working of signals to be tested.- The signalman on duty must see that the points and signals are kept in perfect working order, and well oiled, and report to the station-master or officer under whose supervision he acts, and to the inspector of the permanent-way, or other person in charge of repairs, any case in which the points, switches, or signals are out of order, or not properly cleansed or oiled.

Signals to be frequently tested - Care in putting on distant signals - Wires to be regulated.- The signalman must frequently examine and try the working of his distant and other signals, to see that they work well, are kept clean, and that the signals show in the proper direction. Great care must be used in putting on a distant signal; it is not sufficient merely to move the lever, but the signalman must, at the same time, watch the signal, or its repeater, so as to ascertain that it obeys the lever, and goes fully on to "Danger." He must take care that the signal wires are kept at the proper length by means of the regulating screws, so as to compensate for the expansion and contraction caused by variation of the temperature.

When home or starting signals become defective.- In the event of a home or starting signal becoming defective, or not working efficiently, a competent person must be placed outside such signal with hand signals and detonators, to act under the instructions of the signalman.

When distant signals become defective.- In the event of a distant signal becoming defective, or not working efficiently, a competent person must be stationed just outside the signal, with hand signals and detonators, to act under the instructions of the signalman; and when such person is out of sight of the home signal, one or more men must be stationed between that post and the defective signal, for the purpose of repeating by hand signals to the man stationed at the distant signal the signals exhibited at the home signal post.

Use of distant signals.- Distant signals must be placed at "Danger" immediately they are passed by a train or engine, and must be kept at "Danger" whenever any obstruction or danger exists upon the line they are intended to protect, and the danger signal must remain exhibited until the obstruction or danger is removed.

Use of home signal.- Whenever the distant signal is at "Danger," the danger signal must also be exhibited at the home signal, except in the case of an approaching train for which both the signals have been taken off. The distant signal must be placed at "Danger" as soon as the engine of the train has passed it, and the home signal be allowed to remain at "All Right," or "Caution" as the case may be, until the train has passed it, or has been brought to a stand, and in the case of junctions, has passed clear over the facing points.

Obstruction of line by shunting or otherwise.- The line must not be obstructed or occupied by shunting or otherwise, until the signals applicable to the line or lines about to be obstructed have first been placed at "Danger."

Signals to be exhibited in case of obstruction.- Should any impediment or obstruction exist upon the line within the sight or knowledge of the signalman, he must exhibit the "Danger" signals, and prevent any train or engine passing his post in that direction until such impediment or obstruction has been removed, and the line made perfectly clear and safe.

Facing points.- When a train is approaching facing points, the signaman must be specially careful to see that the lever of the locking frame which governs the facing points is close

home to the frame, and the catch firmly down in the notch, and so kept till the whole of the train has passed.

Points to be frequently tested.- All facing points must be frequently tested by the signalman, so that he may satisfy himself they work well, and that no part is njured.

Points to be securly fastened, and held for the passage of trains.- Facing points not worked from a locking frame must, in all cases, be securely fastened or held for the passage of trains. It is the duty of signalmen to see that the last vehicle of every train going over points under their charge has passed perfectly clear of the points before any alteration is made either in the points or signals.

Working of junction signals.- All signals at junctions must be kept at "Danger," except when lowered for a train to pass. When a train approaches a junction, the signalman must ascertain whether the line on which the train is about to run is clear, and, if so, next see that the facing points are properly set for the coming train, and then exhibit the signals for it to proceed.

When two trains approach a junction at same time.- If, when two or more trains approach a junction at nearly the same time, the signalman should have lowered the signals for a train should have been kept back for the passage of another, he must not attempt to alter the order of the trains by reversing the signals, but must put up all the signals to "Danger," and keep them on until all the trains have been brought to a stand, when precedence can be given to the proper train.

Time interval between trains at junctions.- Should two trains, which have to run forward on the same line, approach a junction within five minutes of each other, the second train must be stopped and the engine-driver informed of the train in advance; if the first train has passed more than five minutes, but less than ten minutes, the signalman must exhibit the caution signal by hand, hand lamp, or flag, as occasion may require, the the engine-driver of the second train.

To give information to the person relieving.- Before a signalman or pointsman goes off duty he must take care to inform the person relieving him how the ordinary, and, if any, special trains are running in their respective districts.

Signalman to repeat guard's signal to driver, if necessary.- Signalmen in charge of signal-boxes at the entrance to station yards must be particularly careful to observe every outward train as it leaves the platform; they are also to look towards the platform immediately after the train has left, in case the guard or station-master should make a "Stop" signal, which, if made, the signalman is at once to repeat to the engine-driver, in order that the train may be stopped.

To be furnished with proper signals by application.- Persons required to give signals must furnish themselves, by application to the proper quarter, with red and green flags, a lamp with red, green, and white glasses, a whistle, and ten detonating signals; all these must be kept constantly in a state of readiness for immediate use.

Care of distant signals.- Signalmen, or porters in charge of signals, must make themselves acquainted with the mode of slackening or tightening the wire of distant signals, and they must adjust the wire as it may be required.

Care of night signals.- During the night time every man in charge of distant or any fixed signals, must, from time to time, satisfy himself that the lamp trimming, where oil is used, is in perfect condition, and, whether oil or gas, that a bright light is exhibited by the lamps; all signals should be lighted no later than sunset.

Not to turn a train into a siding if travelling too fast.- No train is to be turned into a siding when approaching too fast to

enter in safety, but must be kept on the straight road; the switchman must note every instance where a train in passing through facing points runs at an excessive speed, and report the same, as well as any other irregularity which may come under his observation, as required by Rule 17.

Shunting train from one main line to the other to allow another to pass.- When a train or engine has to be shunted from one main line to the other, to allow a following train to pass, such train or engine must be set well within the home signal, so as to be efficiently protected by it from any train or engine approaching from the opposite direction.

Shunting operations to be protected.- No engine or vehicle must be shunted or moved from one main line to the other, or from the main line into a siding, or from a siding on to the main line, until the proper signals have been exhibited in one or both directions, as may be required; and care must be taken when the main line is about to be obstructed, after a distant signal has been placed at "Danger" for the purpose of protecting it, to allow sufficient time to elapse for any approaching engine or train (which may have been near to or within such signal before it was so placed at "Danger") to pass before the obstruction is allowed.

Signal-box to be kept private.- Each signalman must keep his signal-box strictly private, and not allow any persons other than the authorized officer, and members of his family who may have to visit him during meals, to enter it.

Signal on rear of train for special to follow.- *Special trains run without notice.*- A special train to follow is indicated by the preceding train carrying on the last vehicle a red disc, or a red flag by day, and an additional red tail lamp by night, but as special trains or engines have frequently to be run without previous notice of any kind, it is necessary for the staff upon the line to be at all times prepared for such extra trains or engines.

Danger signal to be shown when signalman leaves his post temporarily.- When it is necessary for a signalman to leave his box for the purpose of re-lighting or re-trimming his distant signal lamps, before proceeding to do so he must, unless otherwise specially instructed, place all his signals at "Danger."

Signalman leaving duty to give information to man by whom he is relieved.- At all signal-boxes where both day and night

signalmen are employed, each signalman before taking charge must, in addition to satisfying himself that all the electric signal bells, points, &c., are in good working order, ascertain from the man he relieves whether there is any special circumstances requiring attention, whether the trains which are due to pass have done so, and, if not, what are the exceptions; also, what trains, if any, are signalled, and all other matters the knowledge of which is necessary to enable him to properly discharge his duty. The signalman relieved must give full information on these points before leaving duty, so that the duties of the post may be conducted in an efficient manner, and any inconvenience arising from the change of men avoided. Each signalman must register in the train-book the time of his arrival on duty and the time of his leaving, and place his signature thereto.

Regulation of clocks in signal-boxes.- Each signalman before commencing duty in the morning must, when practicable, compare the clock in his box with the station clock, and if any difference exist he must correct his own with the station clock, so that the correct time may be shown. Where the signalboxes are some distance from a station, the signalman must satisfy himself that his clock is going well and keeping good time, by comparing it from time to time with the nearest station clock. If a clock gets out of order and does not keep good time, it must be reported to the station-master or inspector who has the supervision of his box, so that the clock may be repaired or replaced without delay.

These Instructions are in addition to those contained in the authorized Book of Rules and Regulations, dated 29th April 1864.

The Common Seal of the Board was hereunto affixed in the presence of the undersigned, two members of the Board, on the 8th day of September, in the year of our Lord One thousand eight hundred and eighty-one.

W. Madden, Vice-President.

A. Morrah, Member.

(As published in the Victorian Government Gazette, 16 September 1881, p2631).

THE BEECHWORTH AND BRIGHT LINES IN 1950

The Victorian Railways was full of delightful by-ways. The Beechworth/Yackandandah and Bright branches in the North East easily fulfilled this description.

The two branchlines serve the area to east and north east of Wangaratta. The original branch line, one of the earliest in Victoria, ran from Bowser (then Beechworth Junction) to the gold mining township of Beechworth. This was opened in two sections, from Beechworth Junction to Everton in 1875, and onwards to Beechworth in 1876. The section between Everton and Beechworth climbed roughly 1000 feet in 10 miles with lengthy 1 in 30 grades. In 1891 the line was extended down the other side of the range to the tiny township of Yackandandah.

Everton became a junction in 1883 when a branch to Myrtleford was opened to serve the Ovens valley. While not as hilly as the Beechworth line, the line did have substantial inclines. Up trains faced a 200 foot climb over 3 miles into Everton. However, the most notable feature of the location of the line was that it was taken directly over a spur between Bowmans and Gapstead instead of taking a flatter route closer to the Ovens River. This meant that all traffic on the branch had to be taken over a 350 foot summit with the final approach in each direction by nearly two miles of 1 in 40 grades. In 1890 the branch was extended up the Ovens valley to the town of Bright. This section gently rose almost continuously for about 18 miles. The effect on loads in both directions can be imagined. On the Down, a D3 could haul 215 tons to Gapstead, but 565 tons thence to Bright. On the Up the effect was even more marked. A D3 could haul 815 tons to Myrtleford but only 215 tons to Bowman and only 230 tons to Everton.

Traffic was relatively sparse in 1949/50. For passenger traffic, Beechworth, the largest town, accounted for 2861 journeys. On the Bright line the loadings were significantly lower: Myrtleford had 592, Porepunkah 471, and Bright 544 journeys. This does not, however, take into account passenger traffic to the Mt Beauty Chalet which was run by the Victorian Railways. Guests of the chalet caught the train to Porepunkah and then a connecting bus and the tickets were accounted for elsewhere.

Goods traffic was similarly light. Beechworth had 2596 tons outwards, but received 6648 tons inwards. No doubt this was mostly for the town itself. Myrtleford was similar (2396 outwards, 4423 inwards). Bright was the only station where the goods traffic was reasonably balanced (6664 tons outward and 5096 inwards). Bright, of course, was a railhead for a significant area of the alps. The surprise was Yackandandah. While it sent only 157 tons, it received 2343 tons. Possibly this was material for the Kiewa hydro-electric scheme which was under construction at the time. Of the remaining stations, Tarrawingee, Everton, and Ovens shipped between 500 and 1000 tons in the year, while Bowman and Ovens received the same amount. Only Everton, Beechworth, Bowman, Myrtleford, and Bright sent or received substantial livestock traffic. Myrtleford was the major shipping point (404 trucks of cattle for the year).

The minor nature of both branches can best be judged by the fact that the highest revenue, just over £10,000, came from Bright. This was exceeded (just) by Peechelba East, an unstaffed goods only terminus, and was doubled by each of Rutherglen and Wahgunyah.

The train service in 1950 was run out of Beechworth and Bright where the engines were stabled.

The Beechworth service could hardly be described as onerous for either man or machine. It basically consisted of three Mixed trains into Wangaratta on Monday, Wednesday, and Friday. The Down left Beechworth around 0745 to

connect with the Up Albury Express at Wangaratta, and the returning Down left Wangaratta at 1310 (connecting from the morning pass from Melbourne) and arrived back at Beechworth at around 1500. The duty was actually even easier than this suggests, as the Beechworth crew only took the Monday Mixed to the junction station of Everton. Here it met the Up Mixed from Bright and the car and van from Beechworth were attached to the Bright train which took them on to Wangaratta. The Beechworth engine and crew then, apparently, waited at Everton for the returning Down before returning to Beechworth. Tuesday mornings were taken up with the weekly jaunt from Beechworth to Yackandandah and return. This left Beechworth at 0815 and returned at 1125.

The Bright crew worked somewhat harder. Monday was occupied by running a return Mixed to Wangaratta. This left Bright at the unfashionable hour of 0545, connected with the Beechworth Mixed at Everton (as already mentioned), and connected with Up Albury Express at Wangaratta. The return Mixed arrived at Bright at 1635. Monday also had a conditional Goods from Wangaratta to Myrtleford and return, which crossed the Mixed at Bowser. On Tuesdays there was a Goods each way over the branch, one from Wangaratta and the other from Bright. The two Goods trains crossed at Myrtleford where, no doubt the crews changed over. On Wednesdays, the Bright loco was used to run a Passenger train to Wangaratta and return. The pass left Bright at just before midday and took just over two and a half hours to reach Wangaratta to connect with the afternoon pass to Melbourne. The return working connected with the Down Albury Express in the evening and did not reach Bright until just before midnight. In addition, there was another conditional goods from Wangaratta to Myrtleford and return. If running, this crossed the Up Pass at Myrtleford. Thursday was a repeat of Tuesday, and Friday was a repeat of Wednesday. On Saturday the only timetabled movement was a conditional Goods from Wangaratta to Myrtleford and return.

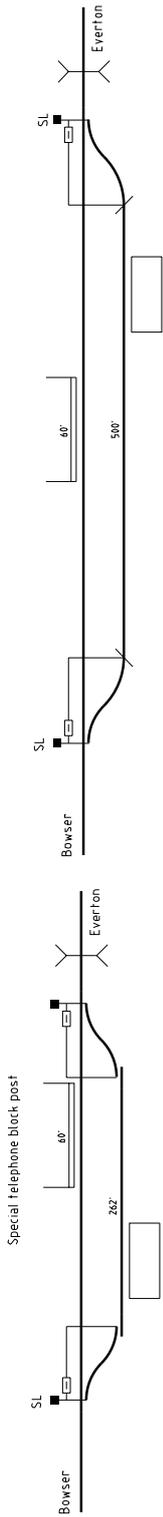
As a harebringer of things to come, the WTT also advertised private road motor services from Wangaratta to Beechworth (once daily with an extra service on Tuesday, Thursdays, and Saturdays). This took just one hour to climb to Beechworth and 45 minutes to return. There was also a daily bus service to Harrierville via Bright - taking just two hours for the journey each way.

The Bright pass was scheduled for a D3 hauling 140 tons, the Bright mixed for a D3 hauling 215 tons, and the Beechworth mixed again for a D3 hauling 210 tons to Everton and 140 tons return. Curiously the WTT gave rail motor schedules (102 HP Walker) for both the Beechworth and Bright lines. It's a pity they were never introduced as they could have outperformed the busses.

For goods trains, loads were given for D1, D3, and K/N class locos. Given the longest turntable was 53 foot, N class running was probably rare. Double heading was permitted between Wangaratta and Everton, but not beyond on either branch. The maximum vehicle limit was 50 to Everton and 30 beyond on both lines.

The maximum speed was 40 mph between Bowser and Everton, 30 mph on the Yackandandah line (25 mph for K/N class engines), and a measly 25 mph on the Bright line for all trains. Trains hauled by an engine running tender first were restricted to 20 mph.

In 1957, Beechworth and Bright had 53 foot turntables, while Everton had a 50 foot turntable. Yackandandah had a 50 foot turntable in the twenties, and probably retained this until the end.

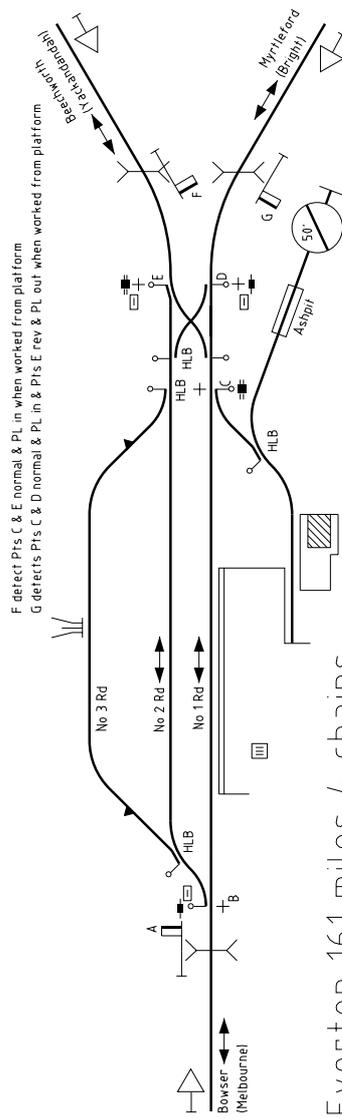


Londrigan 152 miles 37 chains

Based on D'Ambrosio drawing dated 25.10.50 & Weston Langford drawing dated 25.5.60

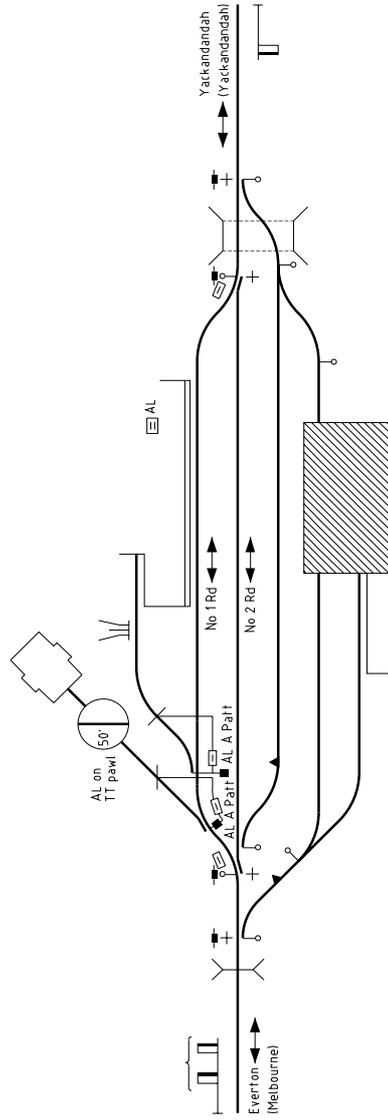
Tarrawingee 157 miles 50 chains

Based on D'Ambrosio drawing dated 25.10.50 & Weston Langford drawing dated 25.5.60



Everton 161 miles 4 chains

Based on RF855 in service 10.8.48, D'Ambrosio drawing dated 25.10.50 & Weston Langford drawing dated 25.5.60

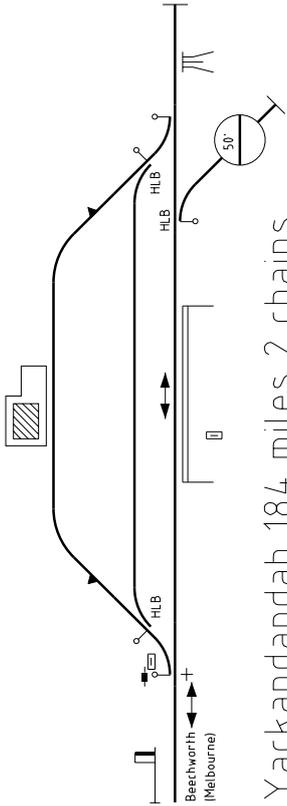


Baarmutha 168 miles 12 chains

Based on Weston Langford drawing dated 25.5.60

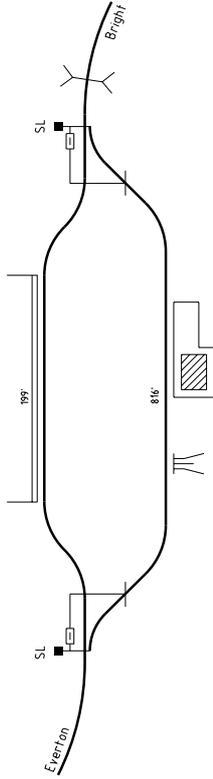
Beechworth 171 miles 18 chains

Based on D'Ambrosio drawing dated 25.10.50 & Weston Langford drawing dated 25.5.60



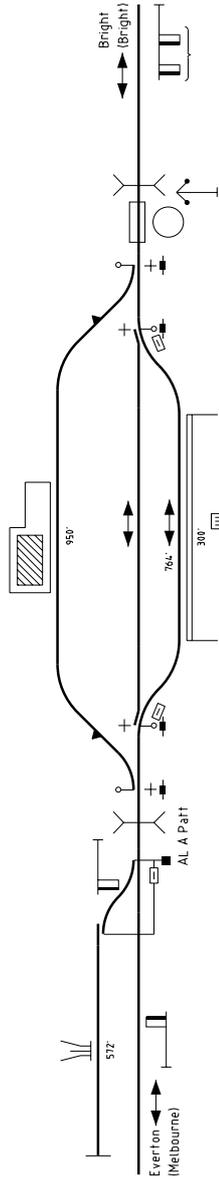
Yackandandah 184 miles 2 chains

Based on D'Ambrosio drawing dated 25.10.50 & Weston Langford drawing dated 25.5.60



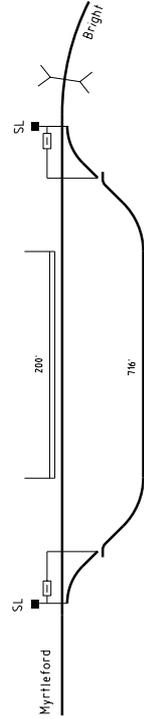
Bowman 168 miles 78 chains

Based on D'Ambrosio drawing dated 25.10.50 & Weston Langford drawing dated 25.5.60



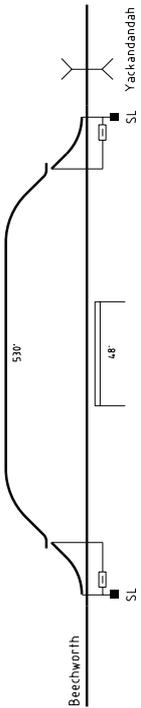
Myrtleford 177 miles 49 chains

Based on D'Ambrosio drawing dated 26.10.50 & Weston Langford drawing dated 25.5.60



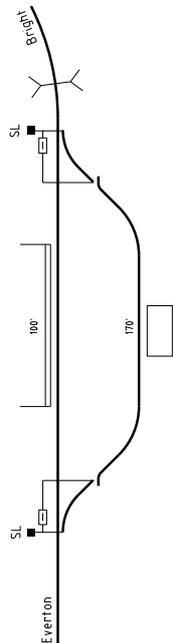
Eurobin 187 miles 52 chains

Based on D'Ambrosio drawing dated 26.10.50 & Weston Langford drawing dated 25.5.60



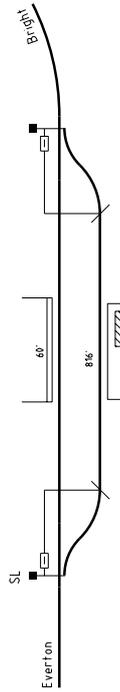
Wooragee 178 miles 65 chains

Based on D'Ambrosio drawing dated 25.10.50 & Weston Langford drawing dated 25.5.60



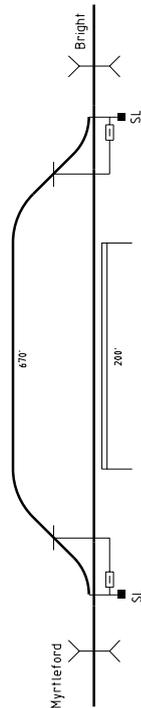
Brookfield 164 miles 23 chains

Based on D'Ambrosio drawing dated 25.10.50 & Weston Langford drawing dated 25.5.60



Gapsted 173 miles 15 chains

Based on D'Ambrosio drawing dated 25.10.50 & Weston Langford drawing dated 25.5.60



Ovens 180 miles 65 chains

Based on D'Ambrosio drawing dated 26.10.50 & Weston Langford drawing dated 25.5.60

The only Stationmasters were at Beechworth, Myrtleford, and Bright. Everton and Yackandandah were worked by porters or ASMs. Londrigan, Tarrawingee, Bowman, Ovens and Porepunkah had caretakers, and the remaining stations were NC. In 1957, the SM Wangaratta supervised the line to Everton (exclusive), the SM Myrtleford from Everton to Ovens (inclusive) and the SM Bright beyond. The SM Beechworth supervised his branch.

The lines were worked by Staff and Ticket. The sections were: Bowser - Everton No 1; Everton - Beechworth No 2; Beechworth - Yackandandah No 1; Everton - Myrtleford No 3; and Myrtleford - Bright No 1. Due to the very heavy falling grade into Everton, the Everton - Beechworth section was worked by Single Line Block using Winter's instruments (the only other sections worked in this way were between Newport South Junction and Williamstown Racecourse, and then only on foggy days when race traffic was running). The block working was to ensure the safety of trains at Everton where the signalman was instructed:

Line Clear for Up Trains.- The Signaller at Everton must have a Clear Line Through the Station Yard as far as the Fouling Point of Nos. 2 and 3 Roads at the Up end, and the Points set for the Clear Line before giving permission for a train to approach from Beechworth, and after the Is Line Clear? signal has been accepted, no obstruction of the Line for which the Signaller has set the Points must be allowed until such train has arrived.

On the other sections the block messages were transmitted by telephone. A Master Key was provided for the Bowser - Everton section, together with a single Key for the Everton - Myrtleford - Bright sections. That key probably was mostly used between Everton and Myrtleford. Londrigan could be opened as a Special Block Post in the Bowser - Everton staff section, and Everton had a Staff Exchange Box.

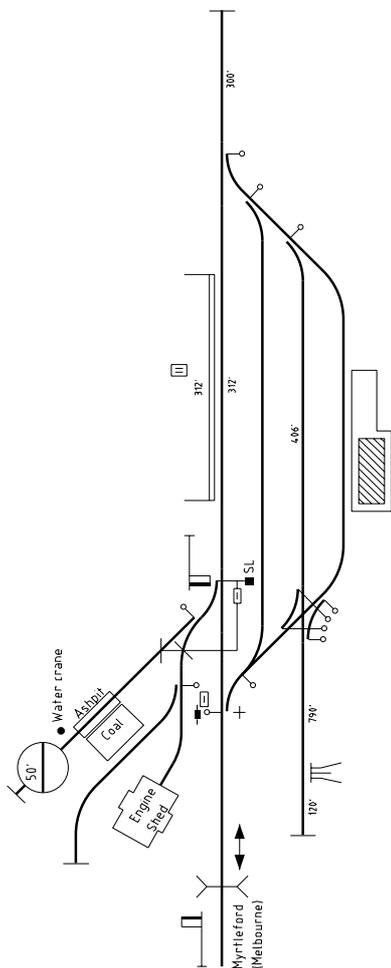
The staff stations were all plunger locked, although Everton had been interlocked until 1944 when the box had been destroyed by a bushfire. The temporary plunger locking there had become permanent in 1948. The arrangement of the detection for the Up Home from the Bright line at Everton is worthy of note. This was fairly standard for plunger locked junctions. At the plunger locked stations facing points for the departing trains were equipped with Annett locks and protecting home signals, again standard practice in Victoria. At Beechworth the livestock and loco sidings were Annett locked, even though they were facing for arriving trains. This was probably to gain the protection of the rodded catch. The provision of an Annett lock on the turntable pawl at Beechworth was definitely unusual. This was only provided in 1942 and may reflect the replacement of the 50 foot turntable with a 53 foot one with consequent fouling of the livestock siding.

Everton had an additional instruction which required that:

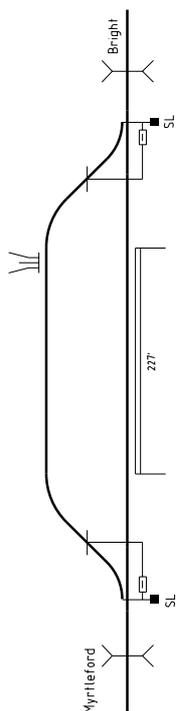
At any time when there are two engines at Everton, and one has to stand out on the main Line clear of the Junction while shunting operations are in progress, the Station-master or person in charge must inform the Driver of the engine that will require to stand out on the Main Line, that he is not to move his engine from there in the direction of the Station Yard until he has been verbally instructed to do so. This is to prevent any Hand Signal that may be given in connection with the shunting operations being taken by the Driver of such engine.

At Everton no vehicle, when coupled to an engine, must be allowed to pass on to the turn-table.

The lines were closed to passenger traffic in 1952/53. That on the Bright line was cancelled after the 11 June 1952, and the last run of the Mixed on the Beechworth line was on Friday, 10 April 1953. Shortly afterward, on 30 June 1953, the single line block working between Everton and Beechworth was replaced by electric staff instruments, and I believe that Gavan Duffy obtained the block instruments. The line between Beechworth and Yackandandah line was closed on 2 July 1954. The stationing of locomotives at Bright and Beechworth lasted until dieselisation in the mid '60s.



Bright 196 miles 9 chains
Based on D'Ambrosio drawing dated 26.10.50 & Weston Langford drawing dated 25.5.60



Porepunkah 192 miles 45 chains
Based on D'Ambrosio drawing dated 26.10.50 & Weston Langford drawing dated 25.5.60

SIGNALLING ALTERATIONS

(Continued from page 40)

- (13.03.2007) **Eaglehawk - Korong Vale** (SW 50/07, WN 10)
Diagrams 94/96 (Eaglehawk - Bridgewater) and 100/06 (Inglewood - Korong Vale) replaced 24/01 (Eaglehawk - Korong Vale).
- 14.03.2007 **Watchem** (SW 52/07, WN 10)
On Wednesday, 14.3., boom barriers were provided at the existing flashing lights at Corack Road (370.015 km) on the Down side of Watchem.
The level crossing was converted to operated by a level crossing predictor and remote monitoring was provided. A notice board lettered 'Stopped/shunting trains must not enter roadway until boom barriers are horizontal' faces Down trains 15 metres from the level crossing and marks the start of the level crossing track circuit.
The level crossing will commence to operate when a Down train approaches the fouling point board at the Down end of the loop. The level crossing will cease to operate when the train has been stationary at the fouling point board for 25 seconds and no Up train is approaching. When the train is to depart, the Driver is to proceed cautiously towards the level crossing and not foul it until the booms are horizontal and the flashing lights have operated for at least 25 seconds.
A signaller will be stationed at Watchem temporarily to operate the level crossing using the test switch for all Down movements.
Diagram 58/07 (Donald Loop - Morton Plains) replaced 02/06.
- 14.03.2007 **Riggs Creek Loop** (SW 59/07, WN 11)
From 1200 hours on Wednesday, 14.3., Riggs Creek will be attended for trains and be classified as an 'Attended Trailable Point Loop'. Train Orders will only be issued to Riggs Creek. The limit of the Train Order will be, as before, the fouling point of the loop. Track permission and Track Authorities are only to be issued up to the arrival signals. All Train Orders for trains departing Riggs Creek will be issued via the signaller. All trains arriving at Riggs Creek must obtain permission to enter the loop from the signaller. If permission to enter the loop has not been obtained, Up trains must stop at Violet Town platform and Down trains at the location board. When trains are to cross at Riggs Creek, the Up train must not be permitted to leave Violet Town platform until the Down train has arrived complete. A competent employee must attend Violet Town station to operate the keyswitch controlling the automatic signal at Cowslip St flashing lights should the Up train be standing at the platform for longer than 4 minutes.
- 17.03.2007 **Ferntree Gully** (SW 57/07, WN 11)
On Saturday, 17.3., pedestrian gates were provided at Bowen St pedestrian crossing (35.565 km).
- 18.03.2007 **Werribee - Little River** (SW 61/07, WN 11)
On Sunday, 18.3., the following track circuits were upgraded: G1119T, G1282T, G1281T, GG1119T, GG1282T, and GG1281T. The G1093UPS, G1230UPS, and G1281UPS were resensitised.
- 18.03.2007 **Box Hill** (SW 59/07, WN 11)
On Sunday, 18.3., alterations were made to the control circuits for the William St pedestrian gates.
- 18.03.2007 **Narre Warren - Berwick** (SW 60/07, WN 11)
On Sunday, 18.3., Automatics D1338 and D1339 were converted to LED.
- 19.03.2007 **Werribee - Lara** (SW 61/07, WN 11)
On Monday, 19.3., the following track circuits were upgraded: G1529T, CG1704T, G1703T, DG1787T, GG1529T, and A16T. The G1599UPS, G1639UPS, G1704UPS, and G1746UPS were resensitised.
- (20.03.2007) **Eaglehawk - Korong Vale** (SW 50/07, WN 11)
Diagrams 94/06 (Eaglehawk - Bridgewater) and 100/06 (Inglewood - Korong Vale) replaced 24/01 (Eaglehawk - Korong Vale) as in service.
- (20.03.2007) **Batman - Upfield** (SW 55/07, WN 11)
Diagram 143/06 (Batman - Upfield) replaced 59/98.
- 20.03.2007 **Lara - Corio** (SW 61/07, WN 11)
On Tuesday, 20.3., the following track circuits were upgraded: B6T, BG2020T, B34T, 18T, and GG2020T. The G1844UPS, G1891UPS, G1906UPS, G1939UPS, G1951UPS, G1993UPS and G2020UPS were resensitised.
- 21.03.2007 **Lara - Corio** (SW 61/07, WN 11)
On Wednesday, 21.3., the following track circuits were upgraded: G2019T, G2103T, 8T, EGG2019, and GG2103T. The G1993UPS, G2020UPS, G2060UPS, G2100UPS, G2132UPS, G2163UPS, and G2209UPS were resensitised.
- 22.03.2007 **Lara - Corio** (SW 61/07, WN 11)
On Thursday, 22.3., the following track circuits were upgraded: A6T, 32T, A20T, and 22T. The G2232UPS, G2256UPS, G2292UPS, G2314UPS, and G2342UPS were resensitised.