

SIGNALLING RECORD SOCIETY (VICTORIA)

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SOCIETY TOUR TO STAWELL AND ARARAT

Thursday September 24 1981

The 0830 Horsham presented members with an unusual sight when they arrived to travel on this train as part of the days tour. B61 and T330 headed a motely collection of eight vehicles and we then learnt that another group were heading in our direction with their special train attached to the front of the Horsham train. The load consisted of 6CW, 17BE, No 5 Sleeper, 68BW, 60BE, 1LAS, 20CE & VBPY66. Departure was on time but after crossing 9130 Jet at Rockbank we were 20' late departing Melton where the up Ballarat passenger was waiting in the loop. Lethargic running was the order of the day and on passing Warrenheip at 1052 which was 22' late, the up Dimboola passenger was waiting on the up line for our train behind S313.

Ballarat was reached 19' late and the front three vehicles were detached and shunted to Platform 2 for the A.R.E.A's special to Geelong. B61 re-attached to the Horsham and departure from Ballarat was 28' late but at least the speed ceiling for the train had been raised from 95Kmph to 115Kmph and perhaps the driver would try and make up a little time.

9146 Jet was waiting at Trawalla with S300 & S304 on the front and a down ballast train was at Beaufort with X37. Ararat was reached 27' late where members took the opportunity to patronise the Refreshment Room which was to close with the commencement of the VR's improved passenger service on October 4, 1981. Another down ballast train was in the yard with T403.

Stawell was reached at 1321, 33' late and members under the guidance of the Ararat Safeworking Officer - Mr Clark Spencer - inspected both signal-boxes. 9144 Jet passed through whilst we were there and the driver, one of our country members - Chris Wurr, demonstrated his talents on the whistle of C510.

On arrival at Great Western both the ballast trains seen previously were there the T class hauled ballast having run round in No 3 road and departed into the Ararat section after 9144 cleared Ararat.

The truncated facilities at Armstrong were next inspected and we were informed that the interlocking was to have been removed prior to our visit but had been left intact until after Show Day. The frame has been sold and will be preserved privately.

A tight squeeze saw us all fit into Ararat "B" Box and after a short inspection the party moved on to "A" Box to wind up the tour. After returning to the station the Group Leader proposed a vote of thanks to our host to which the members responded with acclamation. We then adjourned to the Refreshment Room for a final purchase before the up Horsham passenger train arrived at 1644 instead of 1619.

Departure from Ararat was at 1706 following the arrival of 9121 Jet at 1704 making us now 32' late. 9133 Jet was in the loop at Trawalla behind C507 and 9127 Jet was at Burrumbeet s down home signal as we arrived now 36' late. Ten minutes were spent at Ballarat where the Refreshment Room did a brisk trade and the down Dimboola passenger train was crossed on the double line. The down Ballarat local passenger was in the loop at Ballan behind X53 and 9147 Jet was advanced to Bank Box Loop for the cross with our train at 1934, C503 was the engine on the Jet.

An uneventful run then followed to Spencer Street where the arrival time was 2045 just 25' late. Society members then went their own ways having spent a very enjoyable day visiting signal boxes and watching trains. Our thanks again go to Jack McLean and Alan Jungwirth for their organisation of the day and to David Langley for his copious notes regarding the places we visited.

Signalling Alterations

- 12-6-1981 FLINDERS STREET. The lead from the Special Lines to the Sandringham sidings was abolished and pts 884 & 890 spiked normal, "E" Box
- 13-6-1981 FLINDERS STREET. New signalling diagram No 19/81 issued, No 18/81 cancelled. The up Caulfield line was realigned at "C" Box along the alignment of No 1 West Oakleigh siding. Post 33 moved 20m in down direction and post 177 relocated to the new alignment. 157U pts restored to service and 174D spiked reverse, clamp locks were provided on 174U points.
- 16-6-1981 FLINDERS STREET. Illuminated 40mph indicators were added to signal Nos 669, 679, 777 and 787 at "E" Box.
- 18-6-1981 PORTLAND. A connection to the Australian Portland Cement Coy sdg was provided secured by an "A" pattern annett lock. To prevent unnecessary operation of the adjacent flashing lights the siding is to be worked directly from Portland yard, shunting from the main line is not permitted.
- WN26/1981 NEWPORT. Commencing forthwith No 221 crossover between the East and West lines on the upside of Paisley must not be used for passenger or goods trains unless specially authorised by the Chief Operations Manager. These instructions do not apply when shunting movements are taking place.
- 27-6-1981 FLINDERS STREET. New signalling diagram No 20/81 issued, No 19/81 cancelled. The down Caulfield line was realigned at "C" Box and dwarf signal 111 abolished. Signal 163 was moved 60 metres in down direction and pts 153 spiked reverse. The controls for the following points and signals were transferred from "D" Box to a control panel provided in "C" Box. Pts Nos 215, 218, 219, 220, 221, 225 and 231 & Signals Nos 315, 316, 317, 318, 319, 320, 321, 325, 333 and 338. Dwarf signal No 323 at "D" Box was abolished.
- 1-7-1981 NORTH GEELONG. Bracket post 13 was moved 10 metres in the up direction whilst Post 15 was renewed in its existing position.
- 2-7-1981 REDCLIFFS. Signal post No 1 (down home signal) was relocated 73m in the up direction.
- 2-7-1981 FRANKSTON. The up distant signal Post 1 was fixed at caution.
- 9-7-1981 SALE. Flashing light signal were provided at Hickey's Road level crossing. A down light signal (two position automatic) was provided on upside of crossing and is not track controlled. When the staff is exchanged for an annett key, the signal will restore to normal and the flashing lights will be converted to manual operation. If the flashing lights are operating at this time they will continue to do so for 40 seconds before cutting out. The signal will clear after 12 seconds of flashing light operation when the a) staff has been recovered and four minutes have elapsed, b) the signal reverse button has been operated for down movements or c) when the down approach track circuit has been vacated for up departures. Normal and reverse buttons are provided at both ends of the siding to enable the signal to be cleared (it will also be track controlled in the manual mode) whilst stop/start buttons are provided to restart the flashing lights if the shunting move clears the crossing.
- 12-7-1981 JOLIMONT JUNCTION. New signalling diagram No 58/80 issued, No 36/80 cancelled. Signals Nos 773, 783 and 784 were abolished. The lead from the Sandringham sidings to the down Sandringham line was provided, No 890 points and 990 dwarf signal provided.
- WN29/1981 ESSENDON. Siding "B" has been reduced in length by 100 metres.
- 14-7-1981 ELMORE. The up departure home signal was abolished and the annett locks on the down & up home arrival signals were removed. A pilot quadrant with "A" pattern annett lock and crossbar provided to secure normal the quadrants of the down & up home arrival signals, Echuca line.
- 26-7-1981 MOOROOLBARK. Post 13, down home signal, was moved 20m in the down direction. The points leading to siding "B" (No 27) and the plunger lever (No 26) were removed. No 10 points leading to siding "A", plunger No 11 and disc signal on post 9 were abolished
- 18-7-1981 RINGWOOD. Post 59 up home signal from Belgrave line was relocated 15 metres in the down direction.

27-7-1981 LITTLE RIVER-CORIO. New signalling diagram No 8/81 issued, No 1/73 cancelled. A new up platform was provided at Little River and the line to Lara was duplicated with the provision of the west linewhich is bi-directionally signalled. The control panel at Little River was abolished, Werribee assuming full control of the station, previously control was transferred to Werribee when the Little River panel was switched out (which was most of the time). An emergency key switch has been provided at Little River to enable the signalling to be switched to the automatic mode in the event of failure of the remote control apparatus. The automatic mode condition being that all down trains will be on the East line and all up trains on the West line. The competent employee in attendance at Little River to initiate the automatic mode must ensure that there are no trains approaching on the right hand line before doing so and the operation of the key switch will not be effective unless the system has been in failure for four minutes. If the points are normal and the signals at proceed during a failure of the remote control system, the automatic mode will be will be achieved without the signals being restored to stop. If the points be reverse and any of the signals cleared, initiating the automatic mode condition will restore the signals to stop, place the points normal and then clear the signals for left hand running through the station.

4-8-1981 RAYWOOD. Closed as an electric staff station the new section being Eaglehawk - Dingee. The fixed signals and plunger locking were retained.

5-8-1981 NORTH GEELONG "C" BOX. New signalling diagram No 1/81 (North Shore-North Geelong-Fyansford) issued, diagram No 5/78 cancelled. The existing North & South Goods Loops were renamed Grain Loop Arr. and Grain Loop Departure respectively. A train staff will be provided for the Grain Loop when completed and all trains using the Grain Loop must carry the staff. The annett locked points were converted to signal box operation and the annett key withdrawn. Discs on posts 20, 21, 22, 23 and 23B were abolished whilst a new disc signal post 12, a new dwarf light signal No 20 and a down home (light) signal post 19B were provided. Disc signal on post 14 was moved 36 metres in the down direction and an additional arm added to post 15 leading toward the Grain Loop Departure.

5-8-1981 SPENCER STREET No 1 BOX. No 151 catch points and No 152 Dwarf signal (from Rail Motor sidings to Platform 6) were relocated 15 metres in the down direction.

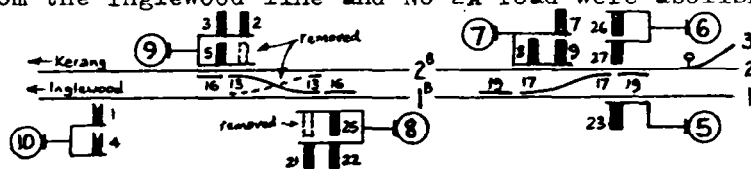
6-8-1981 SPENCER STREET No 1 BOX. No 151 points and No 150 down home signal (from Platform 6) were relocated 15 metres in the down direction account extension of platform six.

6-8-1981 SPRINGVALE. Pedestrian boom barriers were provided at Springvale Road level crossing and work in conjunction with the boombarriers.

9-8-1981 CLIFTON HILL. Up home signal Post 23 was relocated 4 metres in the up direction account extension of platform.

10-8-1981 ELSTERNWICK. The two lever ground frame "Frame B" was taken out of service and the points spiked normal.

15-8-1981 EAGLEHAWK. Points No 14 and the signals on posts 8 & 9 applicable to or from the Inglewood line and No 2A road were abolished.



19-8-1981 MILDURA. Flashing lights were provided at Eleventh Street level crossing and work automatically for up & down trains.

25-8-1981 IRYMPLE. Flashing lights were provided at Sandalong Avenue level crossing and work automatically for up & down trains.

26-8-1981 IRYMPLE. Flashing lights were provided at Cowra Avenue level crossing and work automatically for up & down trains. The staff locks on the adjacent siding points were replaced by annett locks and the exchange of the staff for an annett key suppresses the operation of both sets of flashing lights provided the train on the main line remains between the approach section indicators. Retrieval of the staff automatically starts the crossing towards which the train is heading unless the train remains in the area

- for more than four minutes when both crossings will operate until the train clears the approach sections for both crossings.
- 31-8-1981 GLEN WAVERLEY. A crossover (not wired for electric traction) was provided at the down end of Nos 3 & 4 roads. Both hand operated points are provided with hand locking bars, pins and padlocks.
- 5-9-1981 LITTLE RIVER-CORIO. New signalling diagram No 21/81 issued, No 8/81 cancelled. Boom barriers were installed at Lara Lakes Road and Windermere Road level crossings. The operation of these booms is automatic for all movements over the crossings. The Lara control panel cannot be switched out at this stage.
- 7-9-1981 DEEP LEAD. The mechanical interlocking was abolished and the main line points spiked normal. All the main line signals were "dressed with black crosses" in accordance with Regulation 91.
- 19-9-1981 LARA-CORIO. New signalling diagram No 29/81 issued, No 21/81 cancelled. The bi-directionally signalled West line was brought into use between Corio and Lara. A new island platform and signal control panel was provided at Corio. Both the control panels at Lara and Corio may now be switched out and where appropriate, illuminated letter "A" lights are provided on the home signals. Boom barriers were installed at Canterbury Road, Lara and Grammer School Road, Corio. 5P key operated switches were provided at Lara and Corio prevent unnecessary operation, when the local control panel is switched out, of the boom barriers at these crossings and also at Lara Lakes Road & Windermere Road crossings. Stopping and express selection push buttons were provided at Corio for both the East & West lines and interlocked with the up home departure signals, and at North Geelong "A" Box for the West line only.
- 30-9-1981 BET BET. Closed as an electric staff station, the new section becoming Maryborough - Dunolly. In recent years Bet Bet was very rarely used and this alteration has been coming for some time. The fixed signals and plunger locking were retained.

INTRODUCTION OF THE NEW COUNTRY PASSENGER SERVICE

With the introduction of the above service, authority is hereby granted for passenger trains to run without a brakevan in the rear on all lines on the up journey except for the Eastern District where the brakevan will be on the front of the train on the down journey. In all cases the Guard must ride in the brakevan. For the guidance of all concerned the following instructions will take effect:-

TRAIN SIGNALS ON TRAILING CARRIAGE

Tail disc or light to indicate last vehicle. 150 (a). Every train travelling on the line must have displayed on the rear of the last vehicle or locomotive where such locomotive is assisting a train in the rear through a section, a White Disc where fitted or a Red Light by day, and a Red Light by night or in foggy weather or during falling snow. When a train is authorised to travel without a brakevan in the rear a White Disc by day, and a Red Light by night must be displayed on the rear of the last vehicle.

The above regulation is clarified as shown hereunder:-

On Electric Suburban type trains where a white tail disc is not fitted a steady red light must be displayed on the rear of the last vehicle by day and night to indicate that the train is complete.

On trains other than Electric Suburban type trains, a white disc by day and a red steady or flashing light by night must be displayed on the rear of the last vehicle to indicate that the train is complete.

GENERAL RULES FOR WORKING THE WESTINGHOUSE AUTOMATIC AIR BRAKE (Not applicable to electric trains)

The rule was amended to the extent that when it was necessary for a brake pipe continuity test to be carried out when the brakevan was not the rear vehicle, the brake pipe cock on the rear vehicle and observe the brake apply and release. This test is to be made at least three minutes before the scheduled departure time (where possible) to ensure an on time departure.

V.R. SIGNALLING HISTORY
ALL STATIONS TO HURSTBRIDGE (continued)

No 18 IVANHOE

Opened with the line in 1888 and possibly had a loop siding but there were no home signals until 1901 when on December 23, "up and down home signals were provided approx. 200 yards out from the facing points and crossed". The loop points were staff locked on 28-5-1903. Figure 1 shows the possible layout of Ivanhoe at this time.

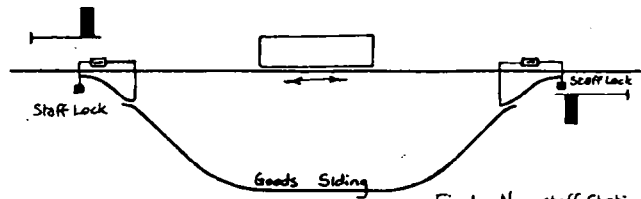


Fig 1. Non-staff Station.

This was the situation until the crossing loop was added and the resulting layout interlocked from an 18 lever frame housed in a small signal box. These alterations took place on December 3, 1909 and the station was opened as an electric staff station early in 1910 dividing the Fairfield Park to Heidelberg section. The May 1910 Working Timetable shows how this alteration permitted two additional trains to run, an Ivanhoe local in the morning and an extra Heidelberg local in the evening, both these additional services crossing each way at Ivanhoe. These were the only crosses scheduled but there is no doubt that the opening of Ivanhoe provided a little more flexibility, and there may well have been other crosses when trains were running late. Figure 2 shows the arrangements in 1910 and it will be noted that all trains used the down platform except when a cross was in progress and then the up platform was used by the up train.

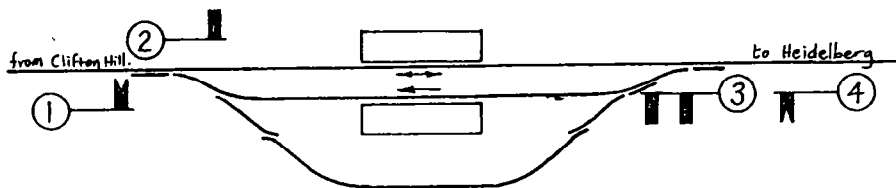


Fig 2. First interlocking.

On April 2, 1912, the 18 lever frame was moved into a signal-bay and conventional up & down working replaced the previous main & one way loop working. An additional departure signal was provided whilst the two armed up home signal was reduced to one arm. During 1912 Alphington replaced Fairfield Park as the staff station on the upside. Figure 3 shows the layout in 1912.

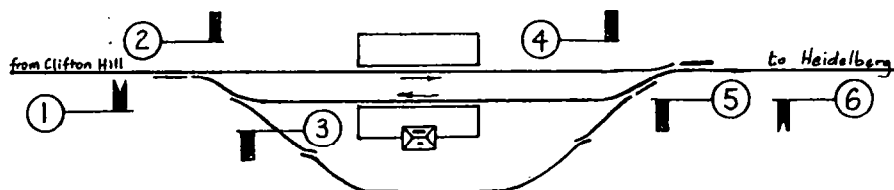


Fig 3. Signal-bay replaces box.

The large pattern electric staff was replaced by miniature electric staff in 1916, being in turn replaced by Lever Locking & Track Control. The 18 lever frame was removed when a signal box with a 26 lever frame was provided on June 12, 1927, the interlocked gates being provided at this time. Discs were provided for moves to and from the goods siding, those leading to the main line at either end being controlled, along with the departure homes, by the control lever at the other end of the section. Figure 4 shows the arrangements in force at Ivanhoe after the installation of the new signal-box.

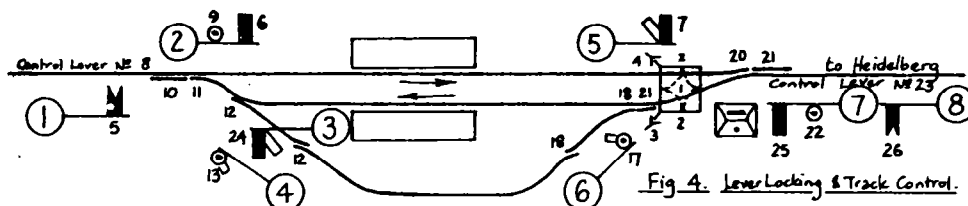


Fig 4. Lever Locking & Track Control.

On both sides of Ivanhoe, stations were opened in the 1920's to cater for the rapidly expanding suburbs but neither had any interest in the safe-working of the line; DAREBIN opened in 1920 and EAGLEMONT opened on 1-5-1926. At Darebin during the duplication works the single line was slued through the new down platform in August 1951 to enable the up platform to be rebuilt before the duplication was brought into service in December 1951.

No further alterations occurred at Ivanhoe until duplication except for the relocation of both distant signals. The down distant which, due to curvature of the line, had been on the upside of the line, was moved to the other side on 19-11-1946 and the up distant was moved nearer the station on 5-12-1946. Both signals were fixed at caution at about this time.

The duplication to Heidelberg was brought into service on June 19, 1949 and three position signalling replaced the previous single line system. The little used goods siding was removed at this time and the down end mechanical signalling replaced by light signals except for the up home signal which remained a mechanical home signal. S353 is lever controlled to protect the interlocked gates but is not a home signal owing to there being no points to protect. Signalling diagram No 2/49 was issued from which our Fig. 5 is taken.

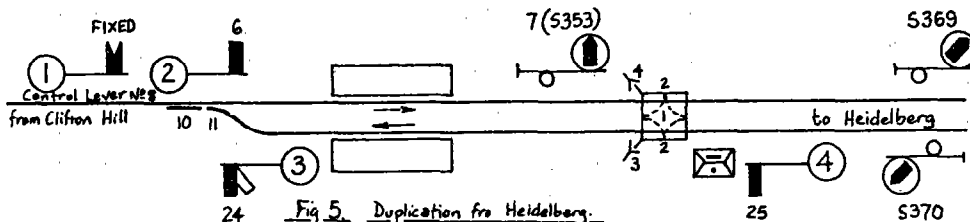


Fig. 5. Duplication from Heidelberg.

Signalling diagram No 8/51, issued in 1951, shows how the double line from Alphington was brought into Ivanhoe and our Figure 6 has been drawn from this diagram. The duplication was opened on December 16, 1951, completing the duplication between Westgarth and Heidelberg and reduced Ivanhoe to a gate box living on borrowed time, the remaining mechanical signals being removed with this alteration.

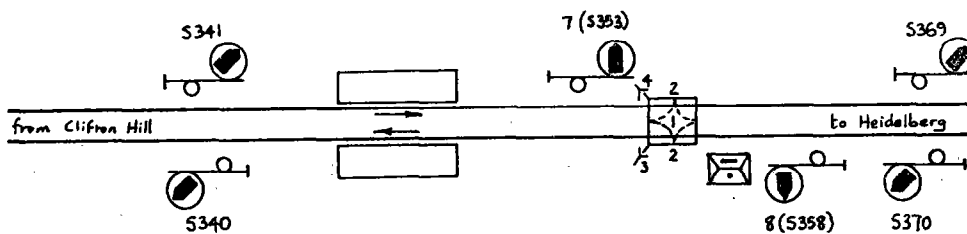


Fig. 6. Duplication from Alphington.

The signal-box and interlocked gates succumbed to automation on August 16, 1960, when boom barriers were provided at the Marshall Street level crossing. S353 is normally at stop to enable a shorter approach section to the booms when a stopping train is arriving at Ivanhoe, express trains having been timed on a special track circuit cause the signal to clear to avoid delays. Figure 7 shows the signals between Ivanhoe and Eaglemont.

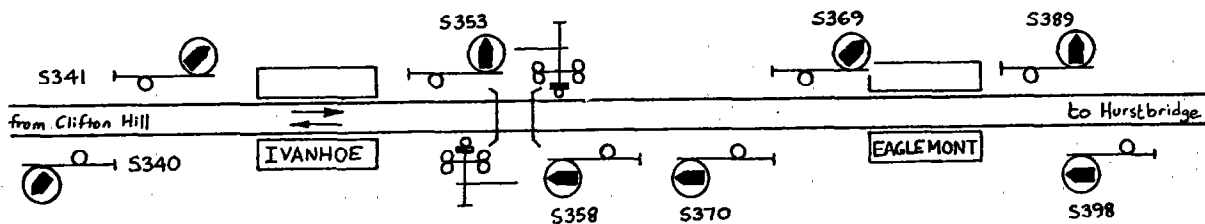
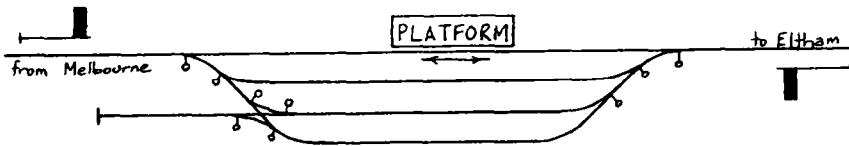


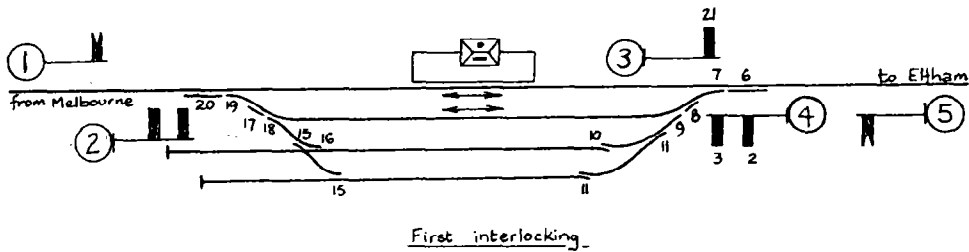
Fig. 7. Booms in lieu of interlocked gates.

No 19 HEIDELBERG

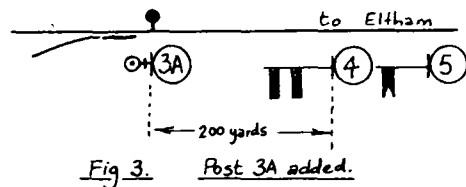
Although I have not as yet seen a plan of the station at the time of its opening in 1888, it would have been much as shown in Figure 1; the main line ending in buffer stops, two or three loops one of which extended to form a loco siding, a home signal worked from a non-interlocked lever on the platform, no distant signal and the facing points secured by a throw over hand locking bar which depended mainly on the enthusiasm of the signal-men. In 1902, the single line was extended to Eltham, across Burgundy Street by a bridge and then almost immediately through a tunnel. For this extension, an up home signal was provided, but again no distant and no certainty that the hand locking bar had been applied to the points. Figure 1 shows the station as it was in 1902.



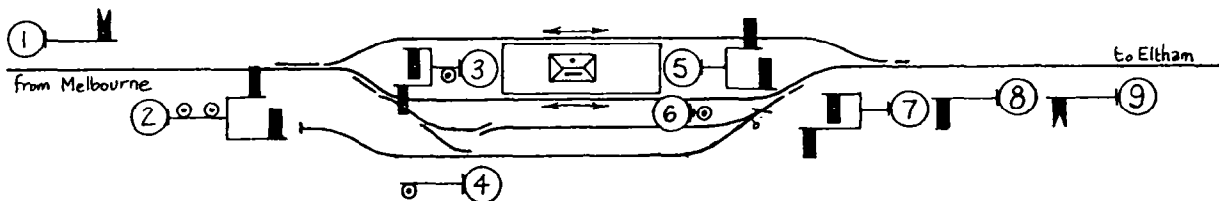
The passenger trains from Melbourne connected with the mixed trains to Eltham and the engines of all these trains had to run round. On August 14, 1905, a 25 lever McKenzie & Holland No 6 pattern (rocker) interlocking frame was installed in which 19 levers were working. The signals and points at that time are shown in Figure 2.



Melbourne engines caused a problem running round their trains in the absence of the train staff for the Eltham section and so, in 1906, signal post No 4 on which were the up home signals, was moved out 200 yards, and a SYX back lock and treadle installed to hold the points. This allowed engines to shunt outside the points but inside the home signals and ground disc No 3A was provided to signal engines only into No 2 road, see Figure 3.



On October 27, 1912, the platform was converted into an island in such a way that the old No 2 road became a platform road and the old No 1 road realigned to become the back platform road. The plan of the station at this time is shown in Figure 4.



As elsewhere in the state at this time, two armed signals were being replaced by brackets, but during 1912 & 1913 only, converging bracket signals were given high and low dollies (see Posts 3 and 5 in Figure 4), whereas since

that time, converging bracket signals have been given level dollies indicating relative importance of the track to which the train is going. The changes made in 1912 did not include an enlargement of the frame and so only the most common movements were signalled. On August 31, 1913, a new frame, this time a McKenzie and Holland "A" pattern (tappet) frame with 35 levers, was installed in the signal-bay. The new frame at Heidelberg allowed a number of new signals to be installed and at the same time, No 5 road was added whilst all the yard roads were extended at the down end to a new connection with the main line, the exit from the yard being signalled by ground disc No 8. The result of these alterations is shown in Figure 5. (Post No 2B was added on June 12, 1927, when Lever Locking and Track Control replaced the miniature electric staff working to Ivanhoe. Post No 2B was controlled by Ivanhoe and was fitted with a train stop).

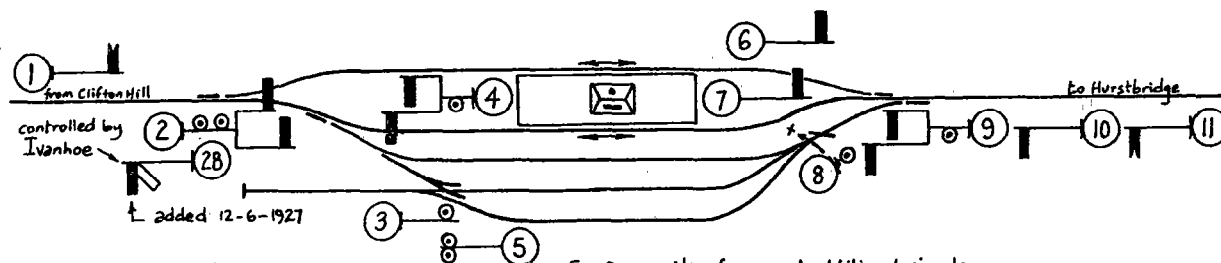


Fig 5. New frame and additional signals.

In 1947 work commenced on the duplication of the section from Ivanhoe and on 15-1-1947, Post No 2 was replaced by a new Post 2 on the left hand side of the line, the original post had been on the right hand side of the line in the deep narrow cutting for sighting purposes. Post No 2B was abolished and the single line controls transferred to the relevant signals on Posts Nos 4 & 5, train stops being provided in Nos 1 and 2 roads but not at the exit from the yard. The track alterations at the up end were brought into use on March 14, 1948, although single line working was still in force to Ivanhoe. The future up line was in use as a works siding and the points leading to the line were connected to the interlocking frame, new Post No 2B provided to signal movements from the siding to the station yard.

The temporary arrangements in use at the up end of Heidelberg are shown in Figure 6.

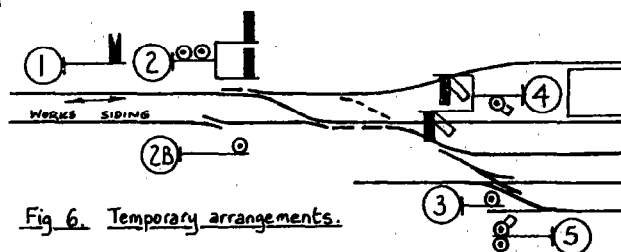


Fig 6. Temporary arrangements.

On June 19, 1949, the double line to Ivanhoe with three position signalling was brought into use. Automatic signal S389 took over the functions of the down distant and remained lever controlled. The double line was so arranged that the down and up lines were extensions of the platform roads with two crossovers between them, the outer crossover being motor worked. Signalling diagram No 2/49 was issued to show the new arrangements and our Figure 7 has been drawn from this diagram.

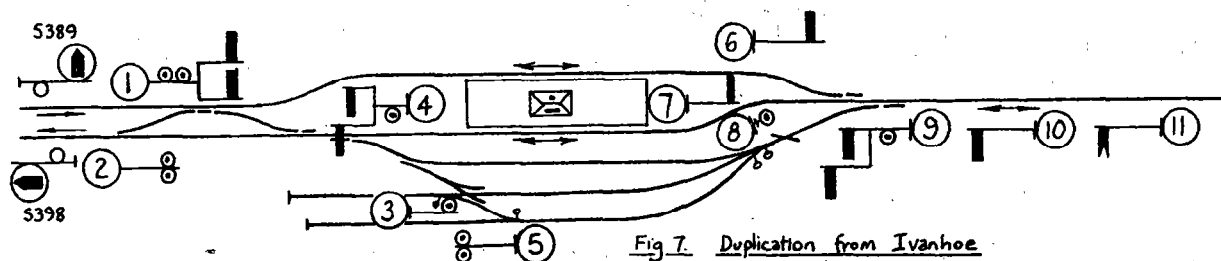


Fig 7. Duplication from Ivanhoe.

The duplication to Macleod was completed on December 14, 1958 commences beyond the stretch of single line across the Burgundy Street bridge and through the tunnel. Three position signalling replaced the miniature electric staff to Macleod and our Figure 8 has been drawn from the information contained on signalling diagram No 12/58.

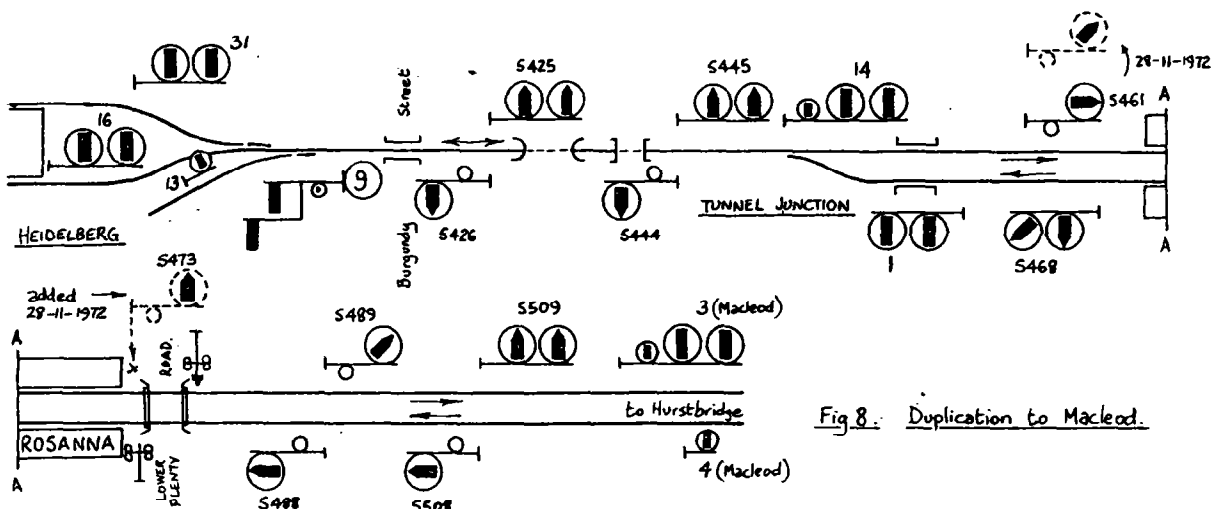


Fig 8. Duplication to Macleod.

The intermediate station between Heidelberg and Macleod, ROSANNA, was opened on October 1, 1907, five years after the line and was a flag station for many years. During the electrification program, a staff locked siding was provided on 1-11-1921, serving the nearby sub-station but was removed on 29-7-1942 during the war. Lower Plenty Road level crossing at the down end was protected by Wig-Wags from about 1928 and instructions were issued whereby the Rosanna local train had to shunt forward and trip the treadle at the crossing. This stopped the Wig-Wag from operating allowing road traffic, what there was of it, to cross the railway line. In January 1950, a "H" key operated switch took over the function of the shunting move obviating the need for the local train to shunt. Flashing Light signals replaced the Wig-Wags with duplication in 1958, these in turn being replaced by boom barriers on November 28, 1972. Automatic signal S473 was provided at this time and is normally at the stop position. This enables a shorter approach to be provided for down stopping trains and the signal clears when the boom barriers have lowered across the roadway.

No 20 MACLEOD

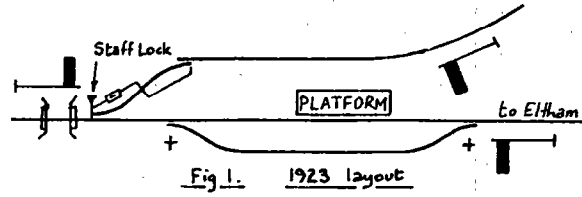
Macleod was opened as a flag station on March 1, 1911, possibly in connection with the construction of the nearby hospital. The branch line from Macleod to Mont Park, which served the same hospital, junctioned with the main line just on the upside of the platform, and opened on August 28, 1911, Macleod opening as a staff station on the same day. Staff & ticket was worked with Heidelberg, Eltham and Mont Park.

There were three home signals, one from each direction and possibly a crossing although there is no definite evidence of the latter. Two passenger trains were not to cross and when a goods train crossed a passenger train, the goods was to side track suggesting that it possibly refuged on the branch. Mont Park had three roads and the 10 mph line was unfenced.

Macleod seems to have remained open as a staff station until 7-7-1913, when it closed as such and the branch staff was withdrawn. The section became Heidelberg although Macleod could be a block post as required and may have opened as a temporary staff station when the goods went to Mont Park.

Greensborough was also opened as a staff & ticket station for excursion traffic until April 1916, when it became a permanent staff station and has been one ever since. In September 1916 (possibly the 15th of that month), the sections Heidelberg-Greensborough-Eltham were converted to miniature electric staff and Macleod was a block post with the newly provided composite staff. The points at Macleod were now MES/Locks but my reference does not say how many locks there were and so there is still doubt that there was a loop there yet. The home signals were crossed. The crossing loop was certainly there by 1919 as the General Appendix for 1919 says that the goods train being sidetracked was to have been placed in the loop.

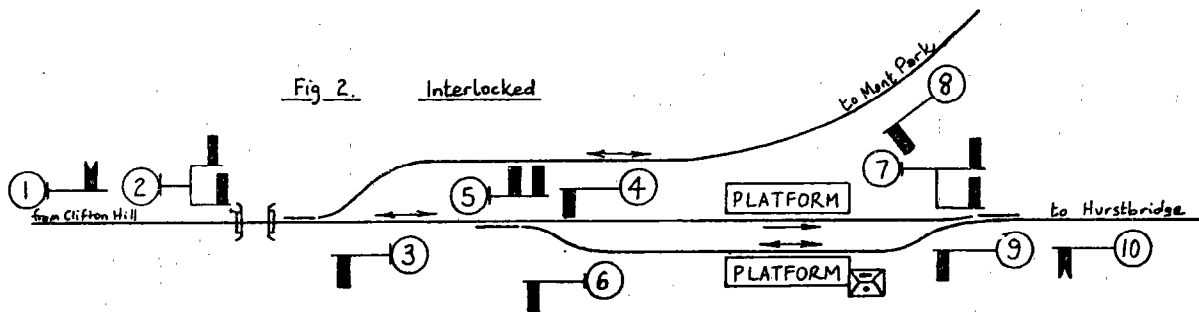
Even when the line between Heidelberg and Eltham was electrified on 15-4-1923, Macleod was still not a staff station, but became one on June 12, 1923. Electric staff instruments were provided for the new short sections Heidelberg to Macleod and Macleod to Greensborough, and a switching instrument enabled the station to switch in and out WITH A TRAIN. It seems likely that the plunger locks on the crossing loop date from this time and Figure 1 shows the possible layout.



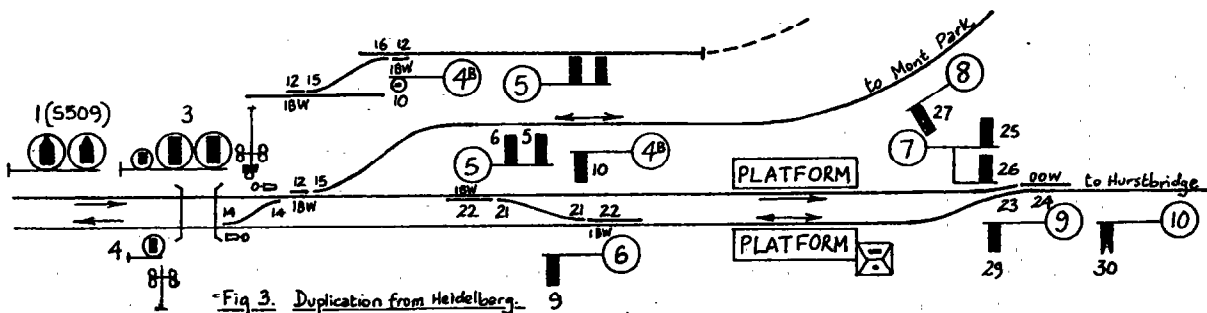
In 1929, Macleod was switched in with the 2155 down on Sundays and remained in until switched out with the 7 13 down the following Saturday. However, in 1934, the switching hours were quite varied; Mondays to Saturdays switched in by the 5 18 down and out by the 7 12 down, in again by the 1707 down and out by the 1954 up. On Tuesdays and Thursdays, when the goods train ran, Macleod switched in by the 1011 up and out by the first train after the down goods. (The Mont Park line was electrified in 1928 and two electric motors handled the goods traffic offering). On Sundays there was one crossing in the afternoon but the WTT gives no information as to the switching times.

This is something like the service which I saw when I first travelled on the line in 1936. A deserted looking wooden faced platform on the down side of the line and a plunger locked crossing loop on the upside protected by two home signals. I am not sure if the junction points were inside or outside the down home signal, but in any case they were staff locked. The staff instruments were housed in a standard portable building at the down end of the platform and so it was preferable to switch in or out with a down train whose driver would be close-by.

On April 24, 1955, the present station building on the new up platform was brought into use and a 30 lever interlocking frame housed therein. This enabled the points and signals to be controlled by the signalman and saved a lot of walking when trains were crossing. The switching instrument was removed and Macleod became a permanent staff station and Figure 2 shows the layout.



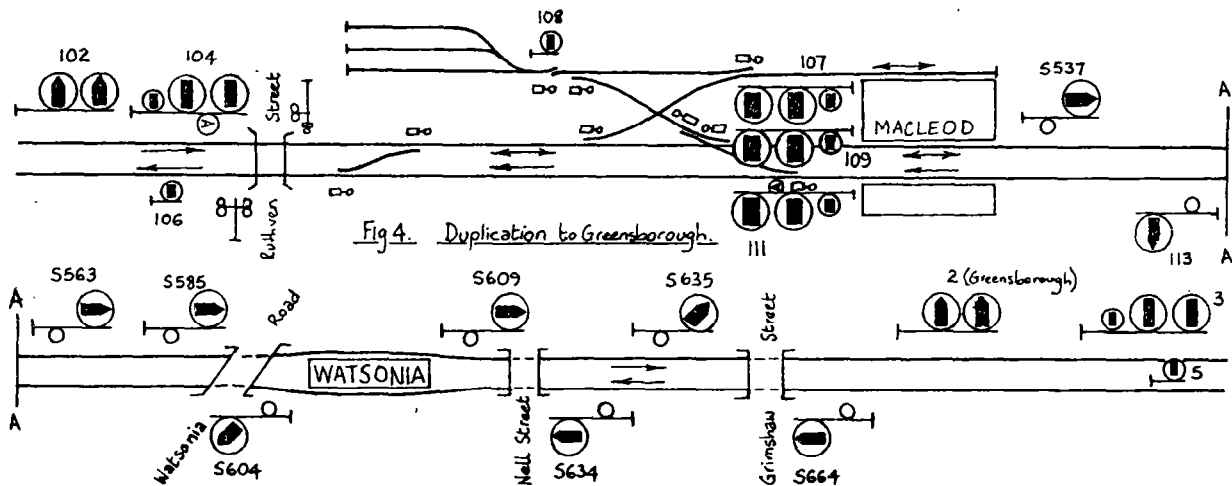
The duplication from Heidelberg opened in 1958 and this caused some alterations to the layout. Figure 3 shows the new arrangements. The small inset diagram shows the alteration to the Mont Park line junction when the line was closed and the portion of branch line behind the station converted to a car siding on 16-5-1966. Post No 4B was converted to a disc on 19-3-1967 and moved to the fouling point of the siding where a set of catch points prevented runaway trains from fouling the main line.



WATSONIA, between Macleod and Greensborough and was to have been named Collina, opened on June 23, 1924 and with the duplication in 1979 was lowered into a cutting as an island platform. This lowering permitted a grade separation with Watsonia Road at the up end. Flashing lights had been provided at Old Greensborough Road, as Watsonia Road was formerly known, and instructions were issued regarding the flashing light operation when the one Watsonia local train commenced running in the 1960's. A board was provided that stated that the local had to proceed to the crossing at 10 mph due to the very short approach section from the platform. An up train from beyond Watsonia started the lights before stopping at the platform.

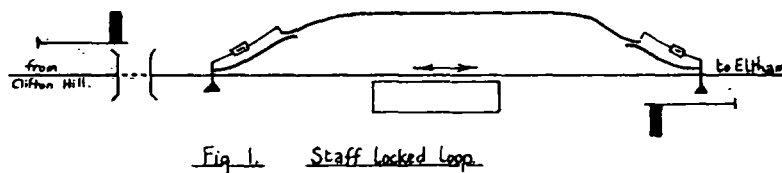
With the construction of the second line proceeding, portion of the new line was ready for ballasting and on 20-6-1976 a staff locked set of points was laid in the single line. This enabled ballast trains to be locked away on the new line whilst suburban trains continued to use the main line. The staff that the ballast train took out to the "works siding" was ferried back to Macleod with a suitable note from the guard to the effect that the single line was again clear. When the train was ready to come out, a staff was obtained by Macleod and ferried out to the "works siding" at Watsonia and handed to the guard who could then operate the points. The train then proceeded to Macleod with the staff.

In August 1978 the new line had been sufficiently completed to enable ballast trains to reach it from Macleod and a connection was laid in from the up platform road. When the double line was opened on August 12, 1979, the points at the down end of the platforms were removed and the remainder of the station yard re-arranged to provide a third platform and three stabling sidings in lieu of the old section of the Mont Park line. The mechanical frame was taken out of use and a control panel provided to work the electro-hydraulically operated points and three position signals. The present arrangements at Macleod and between there and Greensborough are shown in Figure 4.



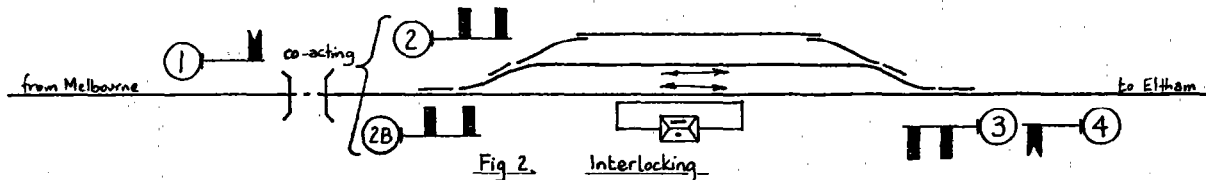
No 21 GREENSBOROUGH

When the line was opened from Heidelberg to Eltham in 1902, Greensborough was the only intermediate station. It had a staff locked loop and two home signals were provided on 1-6-1903, Figure 1 shows the arrangements at Greensborough at this time.



On July 14, 1910, when the 1910 Working Timetable showed that there were only three trains a day on weekdays (with an extra on Tuesdays and Thursdays), the station was interlocked, a 20 lever frame being installed in a signal-bay.

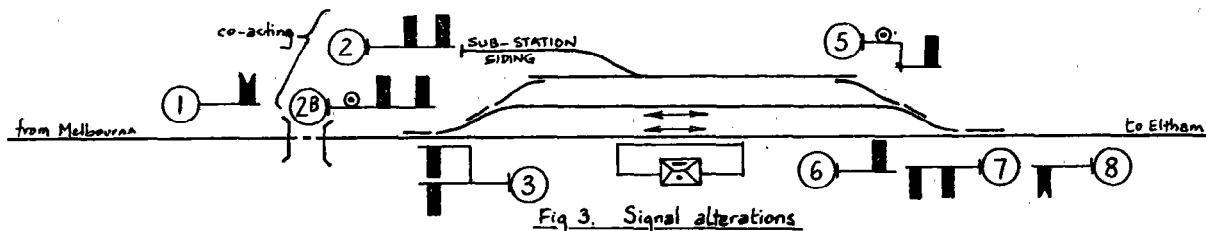
The crossing loop was added at this time and Figure 2 shows the layout then in use. Due to a narrow curving cutting, trains approaching Greensborough on the down had a restricted view of the signals and so Post 2 was erected high up on the top of the cutting whilst "fog arms" were provided on Post 2B in the cutting on the right hand side of the track. The arms on these two posts were co-acting (worked by the same lever). By 1925 Post 2B had been relocated to the lefthand side of the track where it remained until removed in 1969.



The interlocking frame, which must have been one of the last McKenzie and Holland No 6 pattern frames installed in Victoria, may have been needed at holidays times when picnic traffic on the line was heavy and Greensborough was a temporary staff station, but otherwise it was not a regular staff station, for instance, when Macleod was opened as a staff station in 1911, the sections were Heidelberg-Macleod-Eltham. It was opened for a spell in 1915 and seems to have become a permanent staff station since 1916 as announced in Weekly Notice No 23 of that year.

The staff & ticket in use so far was replaced by miniature electric staff in September 1916. Macleod had been a composite staff block post on Sundays since the introduction of electric staff became a staff station in 1923 and switching instruments enabled long section working between Heidelberg and Greensborough. This was shortly after the electrification of the line on April 15, 1923.

On October 20, 1925, departure signals from Nos 1 & 2 roads were provided together with discs into and out of No 3 road at both ends. This caused a shortage of levers, 22 being required, and this was overcome by the provision of escapment cranks on the main line points at both ends whereby the points were unlocked, operated to their new position and re-locked with the one lever movement. This saved two levers and enabled the alterations to be kept within the capacity of the 20 lever frame. A sub-station siding was provided about the time of electrification and the layout in 1925 is shown in Figure 3.



The method of crossing trains by shunting one from the platform to the crossing loop is a slow method and does not fit in with the operation of suburban electric trains and accordingly the layout of Greensborough was altered to provide an island platform, thus reducing the crossing time from about eight minutes to four minutes. The island platform faces were staggered to enable the trains to stop with the drivers cabs outside the building facilitating a rapid exchange of staffs. This alterations coincided with the introduction of a regular frequency service of trains to Eltham and Hurstbridge with every down train crossing an up at Greensborough. All the main line signals were replaced by light signals except for the distants which were fixed at caution and the newly installed starting signals, and train stops were provided for the three home departure signals On Posts Nos 5, 6 & 9. This feature enabled the arrival signals to be cleared for both directions simultaneously, a very rare feature on electric staff lines, normally only one train at a time is permitted to arrive at a single line crossing station although both may depart together. To-work the signals and points, a new frame of 30 levers was provided in the new station building.

Because of the need to remove the old building and frame before the back platform road could be completed, the new frame was brought into use on November 16, 1969 and worked the old layout except that No 3 road was spiked out of use. Figure 4 shows the temporary arrangements including the removal of the escapement cranks from the main line points.

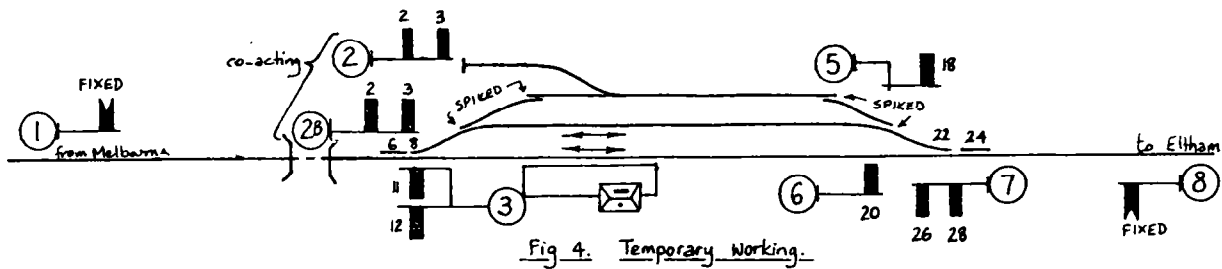


Fig 4. Temporary Working.

The completed island platform and new signalling arrangements, as shown on signalling diagram No 34/69, were brought into use on November 28, 1969. Figure 5 shows the new layout at Greensborough after 1969.

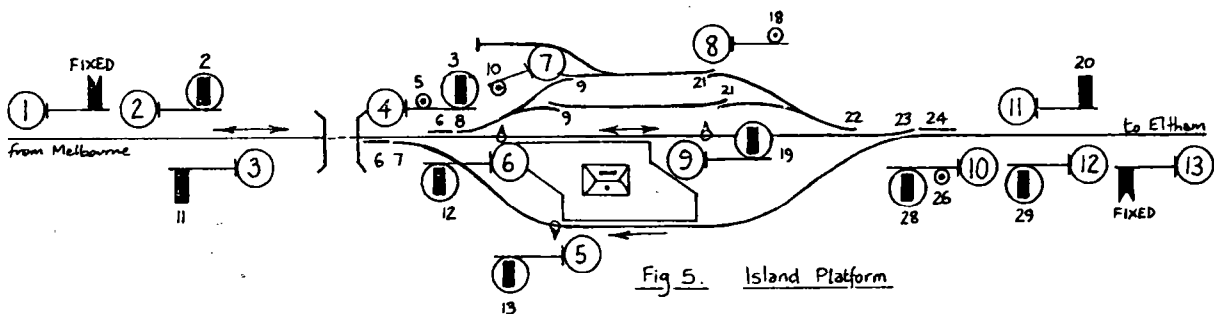


Fig 5. Island Platform.

With the extension of the double line from Macleod, the up end of Greensborough was re-arranged enabling the new line to be an extension of the back platform road. The signals at the up end were converted to three position signals and the crossover points became electro-hydraulically operated. Nos 3 and 4 roads were removed, and the platform roads signalled for two-way running, with suitable alteration to the down end signalling. The present layout at Greensborough, as brought into service on August 12, 1979 and shown on signalling diagram No 9/79, is shown in our Figure 6.

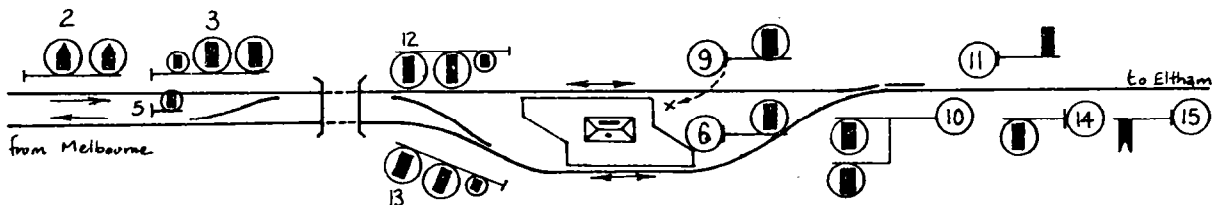


Fig 6. Duplication from Macleod.

The section to Eltham remains worked by miniature electric staff. In this section, MONTMORENCY was opened on September 5, 1923 and has remained a single faced platform on the down side of the line ever since.

No 22 ELTHAM

With the opening of the line from Heidelberg on June 5, 1902, Eltham became the terminus until the extension to Hurstbridge on June 25, 1912. The station yard was most likely the standard Victorian three road layout, the main line points at the Melbourne end being secured by a staff lock the key of which was the train staff for the section from Heidelberg. A down home signal was provided worked from a quadrant lever on the platform. With the extension to Hurstbridge, an up home signal was provided also worked from a quadrant lever and the main line points at both ends now secured by plunger locks. The layout at this time is shown in Figure 1.



Fig. 1. Plunger locked crossing loop.

Until 1911 staff & ticket was worked with Heidelberg but then Macleod became the upside staff station. This was short lived with Macleod closing as such in 1913 when Heidelberg again became the staff station on the Melbourne side. Greensborough was a temporary staff station during busy traffic periods and Macleod opened as a staff station when the goods went to Mont Park. In April 1916 Greensborough became a permant staff station dividing the section from Heidelberg and miniature electric staff replaced the staff & ticket in September 1916. On the down side of Eltham, one section staff & ticket has been worked with Hurstbridge ever since opening although from about 1914, Diamond Creek has been available as a temporary staff station and from about the 1950's has opened during the peak periods to cross suburban electric trains.

Electric trains started running to Eltham on April 15, 1923, connecting there with a steam shuttle to Hurstbridge although through trains were run on Sundays and holiday periods. To handle the interchange of passengers at the single platform must have had its problems and to make things a little easier, a back platform was added where the electric trains could terminate allowing the Hurstbridge train to remain in the main platform whilst running round. When the electrification was extended to Hurstbridge on June 2, 1926, the back platform again enabled the Eltham locals to avoid the electric shuttle serving Hurstbridge.

With the provision of the back platform on June 10, 1923, the yard was interlocked and a 35 lever McKenzie & Holland tappet frame was provided in the signal-bay. Signalling diagram No 6/23 was issued and has been reproduced here as our Figure 2.

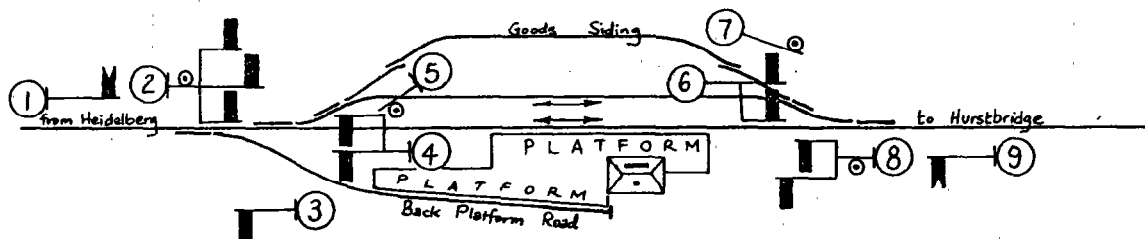
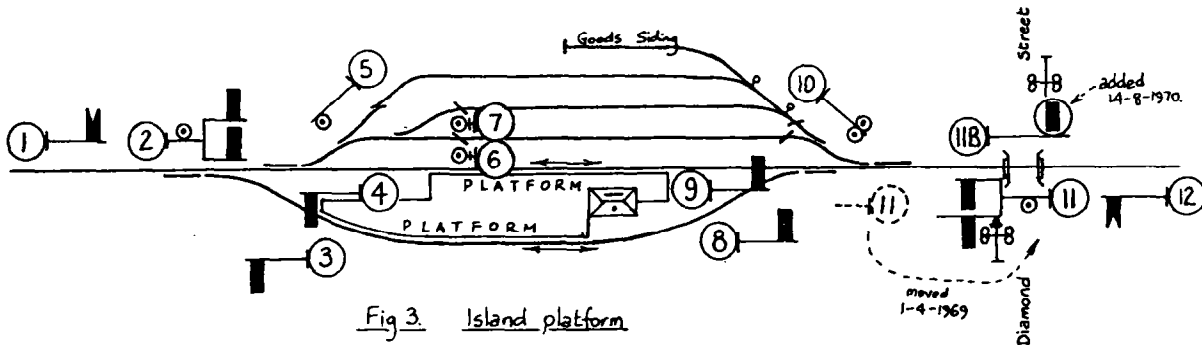


Fig. 2. Interlocked

For many years only two suburban trains stabled overnight at Eltham and to provide trains for the other peak services to and from Eltham, trains were brought out from Melbourne, causing a certain amount of virtually empty running. To overcome this wasteful problem, additional siding accomodation was provided at Eltham by laying another loop between the crossing loop and the goods siding. The back platform was converted into a loop by connecting it with the main line at the down end of the station, a new building being provided although the interlocking frame remained the same. This new platform

loop enabled the former crossing loop to be converted into another stabling siding without taking up valuable platform space. The provision of the island platform also saved Hurstbridge trains that waited at Eltham to cross an opposing train, from having to shunt to the crossing loop. The new arrangements, which were shown on signalling diagram No 2/60, were brought into use on May 22, 1960 and the layout has been reproduced here as Figure 3.



At the down end of Eltham and shown on the above diagram, is the flashing light installation at Diamond Street. This was not brought into use until April 1, 1969 and previous to this time, Post No 11 was located on the Melbourne side of the crossing protecting the points leading into the yard. It was relocated to provide signal protection for the flashing lights. The light signal at the crossing, Post No 11B, was added on August 14, 1970 and facilitates the shunting at Eltham whereby it can be held at stop and a train brought up to the signal without activating the flashing lights. Previously any train that passed signal posts Nos 8, 9 or 10 required the flashing lights operating.

Further out towards Diamond Creek, flashing lights were provided at Railway Road on 18-12-1968 and Wattle Tree Road on 13-2-1963.

(to be continued)

ARARAT - STAWELL - GRAMPIANS AREA

Additions and corrections

The following notes have been received from Bob Whitehead and it was our intention to include them in the tour notes for Show Day.

The line from Beaufort to Ararat was officially opened on Tuesday 6 April 1875 with regular services commencing next day. The line from Ararat to Dunkeld opened on 23 April 1877 and to Hamilton on 26 October 1877. The line between Hamilton and Portland was completed on 21 November 1877 but the official opening did not take place until 9 January 1878.

When the new locomotive depot was built at Ararat adjacent to the Avoca line, an 85' turntable was provided in lieu of the previous 70' turntable of 1922.

Grampians Line (Tramway) construction contract signed February 1881.

Construction was completed from Grampians Junction (243.1 Km) to Grampians (Quarry) by October 1881 and the first train load of Grampians sandstone reached Stawell on 23 February 1882. The main line connection at Grampians Junction was provided in May 1881 and a contract for a signal box was subsequently signed, the building being completed early in 1888. There is however, no record to show that interlocking was ever provided at the junction. The branch line was extended into Stawell yard in 1889 and the interlocking at Stawell was brought into use on 7 March 1889.

The Grampians line was not handed over officially from the Public Works Department to the Victorian Railways until 1905.

In the 1920's there were two firewood loading sites on the line and trucks awaiting loading were left secured on the main line. This system was also employed when the Australian Wheat Board opened its wheat depot near the level crossing with the Western Highway in 1942. Chocks blocks were provided on either side of this depot to prevent the trucks from running away. In 1947 this site was taken over by the Australian Barley Board until 1954. The Grain Elevators Board opened a bulkhead at 244 Km in 1954 and another one at 243 Km in 1962. The line beyond the Barley Board site had closed in 1949.

To protect the trucks that were left standing on the Grampians line a special lever sleeve was provided at Stawell "B" Box to indicate "wagons on line" and it was placed on the signal lever leading to the branch line whilst trucks were left out there.

INTRODUCTION OF BATTERY OPERATED FLASHING SIDE LAMPS AND REFLECTORISED TAIL DISCS FOR END CARS UPON THE INTRODUCTION OF THE NEW COUNTRY PASSENGER SERVICE.	A 812/81 25-9-81
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It is proposed that on the introduction of the above services, END cars e.g. BE, BW, BS, BPL, etc., which will trail in the up direction on all lines except the Eastern District where they will trail in the down direction, be fitted with battery operated flashing side lamps, together with a reflectorised tail disc.

A suitable amendment to Regulation 150, Clause A, of the Book of Rules and Regulations is being prepared.

Flashing lamps will operate during darkness and foggy weather on the trailing end car and a reflectorised tail disc will be fitted; there will be no conventional kerosene tail lamp.

The usual van lamps will operate where the brakevan is trailing on down trains ex Melbourne and up trains in the Eastern District between Sale and Melbourne (presumably also on down trains between Sale and Bairnsdale - Ed)

Arrangements have been made by the Chief Mechanical Engineer to progressively ensure that end bracket be drilled in order that a 5P lock can be fitted above each flashing lamp. Where lamps are secured with a lock it will be necessary to remove them, except for battery changing or if it necessary to place them on another car or trailing VIPY type van.

Where lamps are not secured with a lock Station Masters at terminal stations should ensure that lamps are taken off cars when trains are not in running and to place them back when train is brought into running. It is imperative, however, that lamps should be fixed to cars when car is running to ensure that lamps are left behind and subsequently be at the wrong end of the section, etc. (This is to apply during both daylight and darkness.)

It is expected that under flashing conditions the six volt battery (identical to batteries used in battery operated hand lamps) will last for approximately 200 hours.

Under normal circumstances station staff at Spencer Street, Flinders Street and terminating stations should check lamps and arrange where necessary to replace the battery. Guards should also be prepared to replace batteries.

The replacement of globes, service and repairs to lamps will be undertaken by train lighting staff for the Chief Mechanical Engineer at Spencer Street and Flinders Street.

Particular care should be taken to switch off the battery operated lamps when not required to conserve the batteries.

C.O.M., C.T.M., C.M.E.
