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SOCIETY CONTACT INFORMATION

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MINUTES OF MEETING HELD FRIDAY 18 MARCH 2016, AT THE SURREY HILLS NEIGHBOURHOOD CENTRE, 1 BEDFORD AVENUE, SURREY HILLS, VICTORIA

Present: – Noel Bamford, Wilfrid Brook, Graeme Cleak, Glenn Cumming, John Dennis, Graeme Dunn, Michael Formaini, Ray Gomerski, Chris Gordon, Judy Gordon, David Jones, Chris King, Keith Lambert, David Langley, Neil Lewis, Steve Malpass, Colin Rutledge, Brian Sherry, David Stosser, Stuart Turnbull and Andrew Wheatland.

Apologies: – Jon Churchward, Steven Dunne, Bill Johnston, Trevor Penn, Peter Silva and Andrew Waugh.
The President, Mr. David Langley, took the chair & opened the meeting at 20:26 hours, following the 2016 Annual General Meeting.

Minutes of the November 2015 Meeting: – Accepted as read. Steve Malpass / Wilfrid Brook. Carried.

Minutes of the February 2016 Meeting: – Accepted as read. Steve Malpass / Wilfrid Brook. Carried.

Business Arising: – Nil.

Correspondence: – Invoice from Surrey Hills Neighbourhood Centre for hire of meeting room for 2016.

Payment sent to Surrey Hills Neighbourhood Centre for hire of meeting room for 2016.

Letter to Chris and Vera Guy thanking them for hosting the February 2016 meeting.

Andrew Wheatland / Steve Malpass. Carried.

Reports: – Archives. Discussions with V/Line for a new lease continue. Recent progress was described. The off site storage has been emptied. The new shelving has been installed and is now full. The train control board has been relocated into the room. The floor in the east room requires repair. Cataloguing and sorting of the documentation needs to be planned. Scanning of documents will be done in the future. Paper and digital collections will be maintained for the time being. Documents that do not fit in with the “core business” of the SRSV will be identified for future disposal.

General Business: – Glenn Cumming reminded all members that membership renewals for 2016 are now payable.

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

- Next Friday the Up Line between Caulfield – Moorabbin will be taken out of use until August 2016. This will be done as part of a nine day shutdown.
- A six week shutdown between Caulfield – Moorabbin commences on Friday 24 June 2016 for grade separation works.
- The signal gantry at the up end of Frankston is to be replaced due to poor condition.

Keith Lambert advised that October 2015 will be the 100th Anniversary of the introduction of three position signalling in Victoria.

Colin Rutledge provided details about various works on the V/Line network. A summary of the

(Front cover). Looking east over Manchester Road towards Mooroolbark station in October 1973. On the left is post 8 which protects the connection from No. 2 road to No. 3 road, the arm reading to No. 2 and the disc towards No. 3. The up signals are posts 9 and 10, post 9 having a disc for moves to Siding A whilst both arms are from their respective roads to Croydon but since the provision of the double line, the little section of single line track between the level crossing and the double line is known as “W”. Photo David Langley

discussion follows: –

- The new crossing loop at Rowsley is planned to come into service in late May 2016.
- The new railway station at Caroline Springs is planned to be opened for traffic in late May 2016.
- A proposal for duplication of the line from Deer Park West to the Down end of Caroline Springs is planned to come into service in November 2016.
- The last mechanical points at South Geelong have been converted to motor operation. This leaves Traralgon as the last location on the V/Line network with mechanical points worked from a lever frame.

Michael Formaini described the speed restrictions on the Oaklands Line.

Colin Rutledge described proposals for arrangements in the North West of the state as a result of the gauge conversion project. A summary of the discussion follows: –

- Gauge conversion works on the Mildura Line are planned to commence in January 2017.
- The arrangements at Dunolly for broad gauge and standard gauge trackwork will change and the new arrangements were described.
- The planned arrangements at Maryborough were described.
- Plans were described for a rebuild of the Ararat – Maryborough Line.
- Plans were outlined for a direct connection between the Portland Line and the Maryborough Line at Ararat (creating a triangle).
- Phase 3 of the project is the conversion of lines through Korong Vale. The plans for this phase were described.

Chris Gordon provided details about various works on the Metro network. A summary of the discussion follows: –

- Dandenong to take remote control of Oakleigh in August 2016.
- Ringwood control panel to be converted to screen based equipment in November 2016.
- Metrol to take remote control of Burnley in December 2016.
- The JZA system from Caulfield to Metrol will be converted to S2 and will then be extended.
- “Trap” track circuits are being installed on metropolitan level crossings as a result of the Velocity train detection problem.
- Axle counters will be installed on level crossings by July 2016 to satisfy the rail safety regulator.

David Stosser had observed that some points at Oakleigh have been clipped.

Chris Gordon described a plan for the Dandenong – Cranbourne Line to be duplicated as far as Bombardier Siding.

Meeting closed at 21:33 hours.

The next meeting will be on Friday 20 May, 2016 at the Surrey Hills Neighbourhood Centre, Bedford Avenue, Surrey Hill, commencing at 20:00 hours (8.00pm).

MOOROOLBARK

David Langley

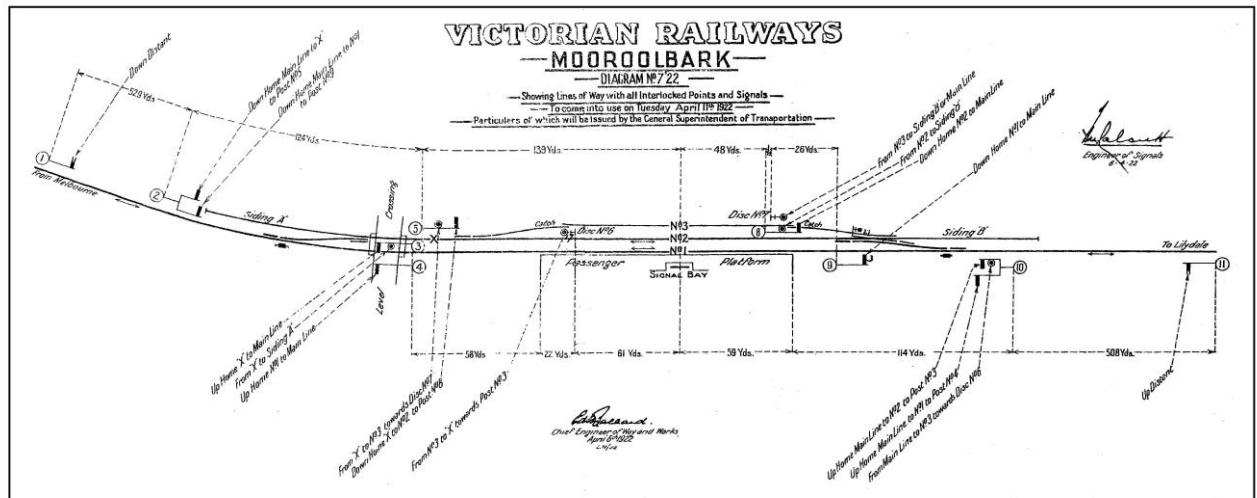
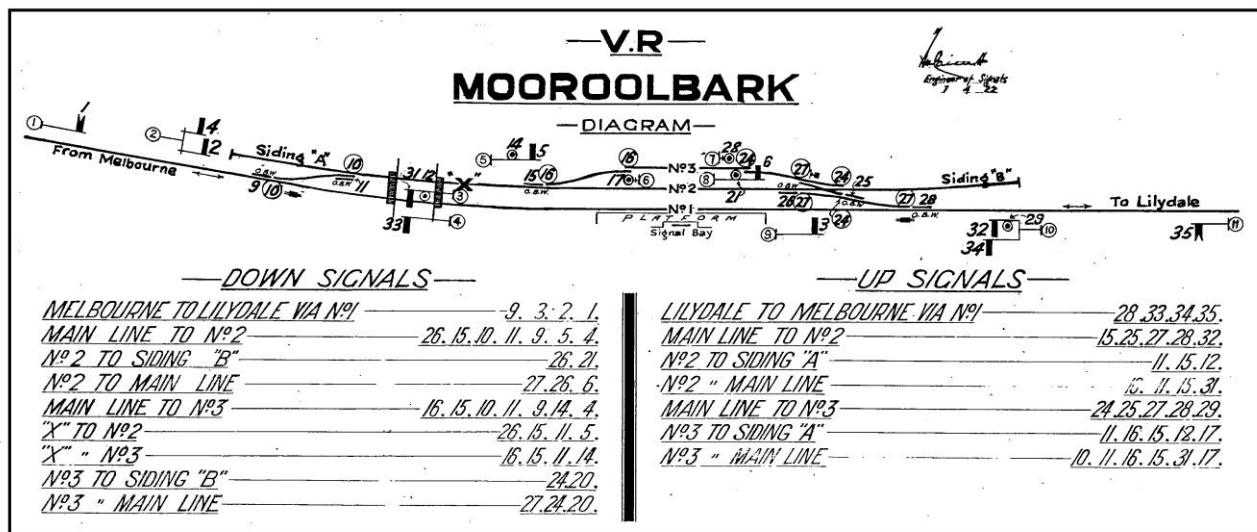
The railway came to the Mooroolbark area when the line from Camberwell to Lilydale was opened on 1st December 1882. Mooroolbark was not an original station on the new line, being opened on 10 October 1887 after the locals had met the Railway Department's condition of providing a road to the station. When the line was opened, the nearest stations to the locality that became Mooroolbark were Warrandyte, which became Croydon on 1 August 1884, and Lilydale itself. Lilydale was only a terminus for a short time as the line was extended to Yarra Glen on 15 May 1888 and finally to Healesville on 1 March 1889. Almost immediately the line became very busy with timber coming out of the forests north and east of Healesville being sawn locally and sent to Melbourne by rail. The branch line to Warburton was opened on 13 November 1901 and soon after even more timber traffic was being railed to Melbourne.

However, despite all this booming traffic in agricultural products, the line remained single with only Croydon as a crossing station between Ringwood and Lilydale until 1922 when a crossing loop was added at Mooroolbark. Perhaps this wasn't as much a problem as it would seem as the sections were fairly short and even

goods trains only took around 15 minutes to traverse each single line section. The line from Melbourne to Ringwood had been doubled by December 1891, but beyond Ringwood it took until the latter part of the 20th century, and then only for the expanding suburban passenger services, for duplication of the main line to be continued and even today (2016) there is no sign of it being extended beyond Mooroolbark to Lilydale.

Mooroolbark, 32.9 kilometres from Flinders Street, was opened on 10 October 1887 and would seem to have been merely a passenger platform with a loop goods siding. A pair of signals were provided to protect the siding but these were removed in February 1899 when staff locks were fitted to the siding points.

The Staff and Ticket system was in use from the opening of the line until large electric staff (ES) was provided on 27 September 1898 for the sections Ringwood - Croydon - Lilydale - Yarra Glen - Healesville. From the beginning, and in common with many places, Mooroolbark took no part in the safeworking of the line but that changed in November 1907 when it became a composite staff telephone block post (believed to be Victoria's first such location) in the



electric staff section Croydon – Lilydale, the composite staff being used regularly on Sundays during summer for the running of Sunday excursion trains to the holiday resort locations of Healesville and Warburton. Without specific knowledge, it could be imagined that it was used at other times to permit a more flexible use of the line.

It also appears that there were no signals provided at Mooroolbark in 1907 and in fact they didn't appear until April 1914 when perhaps it was decided that the need to appoint a "down" and/or an "up" home signal flagman was getting to be a bother. It was probably deemed much safer to provide signals.

Miniature Electric Staff (MES) replaced the large pattern stuff during 1915, both compos being converted to the miniature pattern.

The use of the composite staff was obviously such a regular feature that in 1922 it was decided to open Mooroolbark as an electric staff crossing station dividing the Croydon – Lilydale section, with full interlocking and as a consequence the composite staff was withdrawn. The official lithograph diagram for the event is shown on the previous page, as is the signal box diagram showing the function of the various levers. It will be noted that the frame was a 35 lever tappet machine and in 1922 there were 8 spare levers.

The table below gives the details from the interlocking register and it can be seen that there were only two major events in the life of Mooroolbark during the mechanical signalling era. They were the duplication from Croydon and the closing of the goods facilities prior to the extension of the duplication to the down end of Mooroolbark and the provision of power signals worked from the new panel at Lilydale in 1985.

Soon after the provision of full signalling, the work at Mooroolbark appears to have become such that a Stationmaster was appointed to directly supervise the work rather than have the supervision being done from Lilydale. During the depression of the 1930s, when many places lost their Stationmasters because of the need to incur savings in the operating budget, Mooroolbark was no exception with the Stationmaster being removed on 8 October 1930. Supervision of the Assistant Stationmasters and/or Operating Porters (later they would become Signal Assistants) was back in the hands of the Stationmaster at Lilydale. After the end of WW2 and the increasing spread of the population, local passenger traffic was increasing and the work of supervision was becoming difficult and so a Stationmaster was re-appointed to Mooroolbark on 9 March 1969. With the

coming of privatisation and the blurring of responsibility amongst the remaining staff, who is to say whether there is still a Stationmaster at Mooroolbark but as our time of interest does not really extend past 1985 then we won't worry too much.

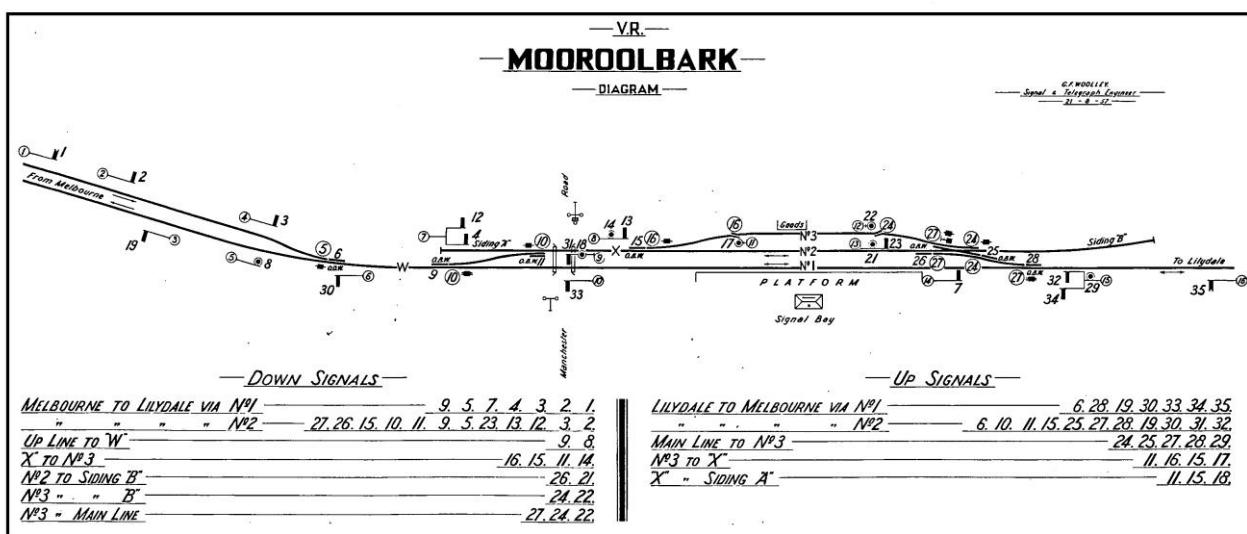
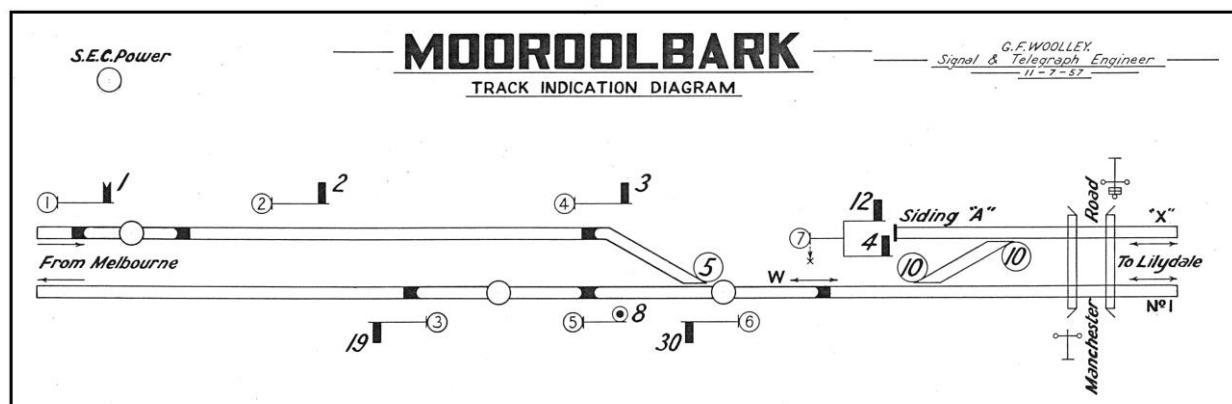
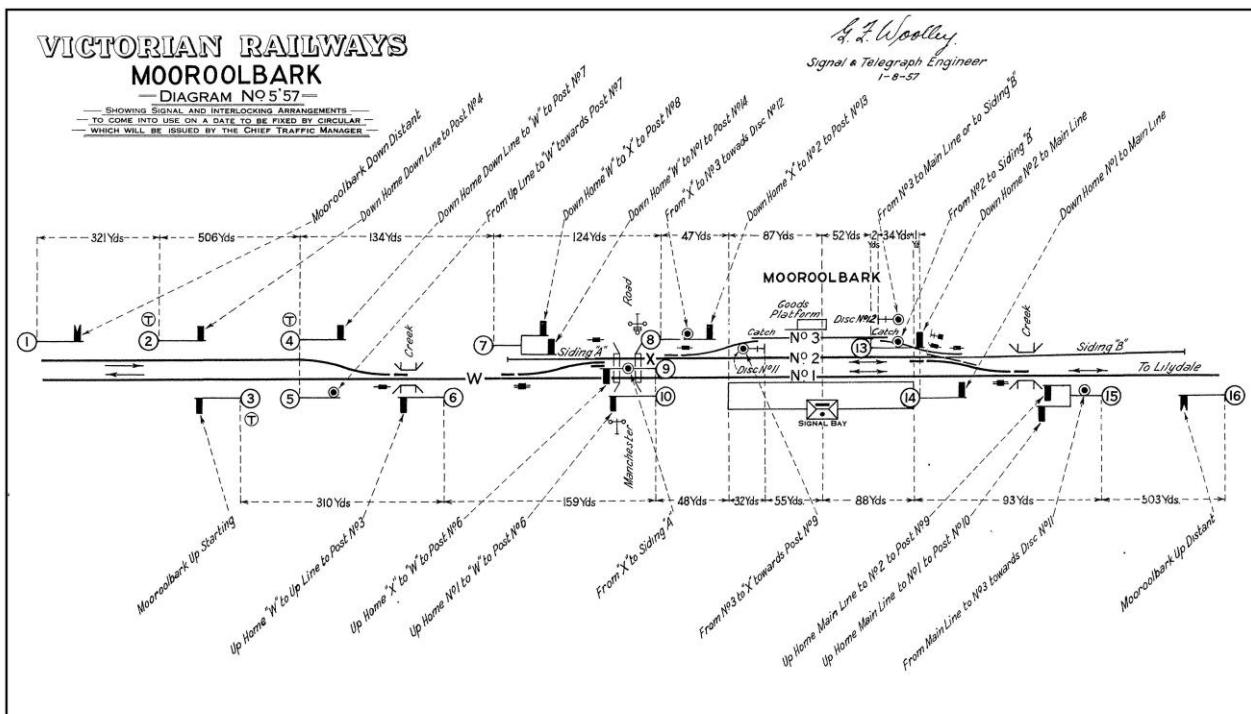
The freight traffic from Healesville and Warburton boomed in the early years with timber being the main product railed out but agricultural products and fruit were also sent away and there was a growing traffic in household fuels, mallee roots and later briquettes. But for all sorts of reasons – larger engines, depression, world wars and the timber industry itself downsizing – the number of goods trains and then even the goods traffic itself died away over the next 60 odd years until the passenger services were unable to sustain the lines and they were closed – Warburton on 29 July 1965 and Healesville on 15 March 1981. Local freight traffic at Mooroolbark was mostly fruit and livestock being railed away and inwards food stuffs etc, for the local population. In later years mallee roots and briquettes became the principal traffic.

And speaking of trains services, this line was also home to that most fascinating use of suburban motor coaches whereby coupled pairs were used to works Healesville and Warburton through trains to and from Flinders Street. E trains – as they were known in the WTT – also ran to Frankston but the most variety in their operation by far was on the Lilydale line. But that is not a story for telling at this time.

The present day level crossing at the Melbourne end of Mooroolbark, part of the road that was formed by the locals in order to meet the railway departments requirements for the provision of the station, was provided with hand operated gates. These gates were removed on 29 June 1896 as part of the widespread introduction of cattle pits at level crossing that saw the elimination of gates and gatekeepers with the consequent savings in wages, a necessity during the depression in the last decade of the 19th century. With the removal of the gates, a simple pair of "crossed railway crossing" signs were provided to warn road users of the existence of the railway. As road traffic grew along this important artery, a better warning system required, flashing lights were deemed a necessity. They were subsequently installed and brought into use on 4 April 1949 but with the continued growth of road traffic, the flashing lights were upgraded to boom barriers, in conjunction with the forthcoming resignalling, on 17 March 1983.

Mooroolbark

Date of Event	Brief Details of Event	Signals	Points	Lock Bars	Spare Levers	Total Levers
11.4.1922	Provision of interlocking in signal bay	17	4	6	8	35
8.9.1957	Duplication from Croydon	22	5	7	1	35
16.4.1981	Abolition of No 3 Road and Siding B	16	3	4	12	35
26.7.1981	Abolition of Siding A	15	3	3	14	35
3.7.1984	Provision of 3 position signals from Croydon	13	3	3	16	35
29.6.1985	Abolished a/c panel at Lilydale					



The already busy and further expanding suburban passenger traffic forced the railways into some action and to ease matters somewhat, it was decided to duplicate the Croydon to Mooroolbark single line section. At both ends there were some minor alterations carried out prior to the commissioning of the double line on 8 September 1957. At Mooroolbark the down distant signal was moved 142 yards (130m) further out on 7 December 1955 but that seems a bit early although in those days, finances were very tight and maybe the job took longer to complete than expected. Never-the-less the duplication was opened on 8 September 1957 and double line block telegraph replaced the electric staff system. Block working still only allowed one train at a time in the section but at least you could have one each way which enabled the service to be improved quite well.

A portion of litho 5'57, the 1957 box diagram, and 1957 track indication panel showing the duplicated layout are shown on the opposite page.

To avoid a wholesale re-arrangement of Mooroolbark yard, the double line ended some distance out, well clear of the current yard. Unsurprisingly, owing to the junction being "round the curve" a track indication panel was provided in the signal box to assist the signalmen, there was a down approach indication, and on the up one showing occupation of the junction points track and also one for up trains sent to the up starting signal to await line clear but it also showed when it cleared that the starting signal lever could be put back in the frame.

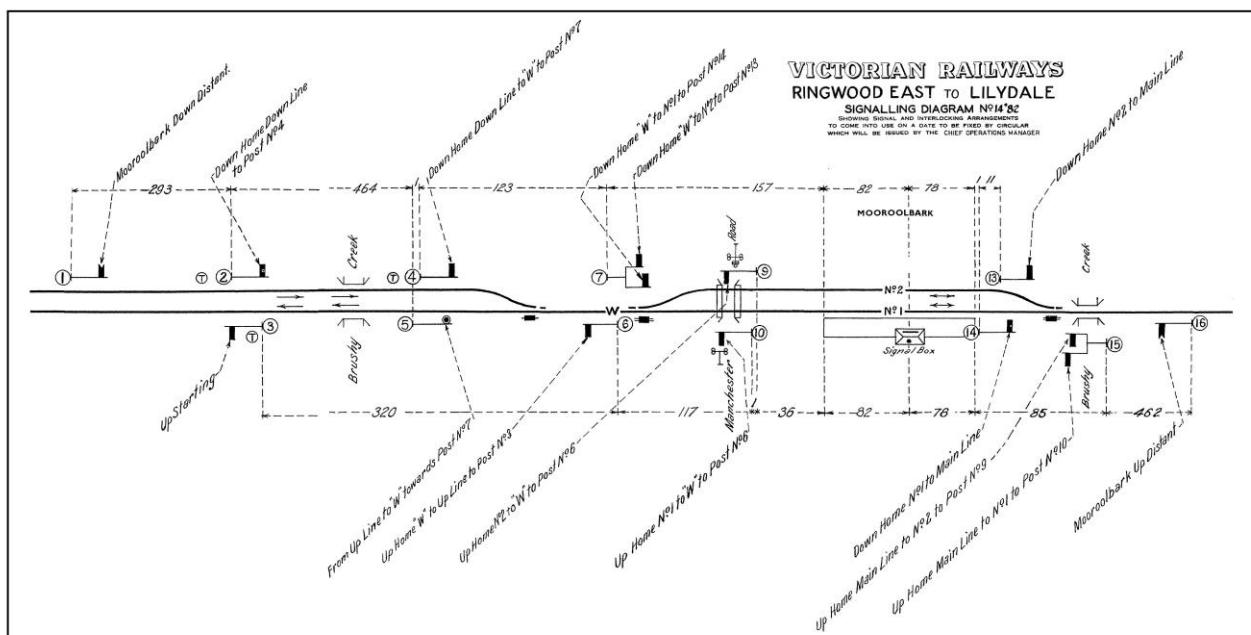
The reduction in facilities in advance of the provision of a second platform and resignalling saw the removal of No. 3 road and the Siding B extension at the down end on 16 April 1981. Signal posts 8, 11 & 12 were removed and the discs on posts 9, 13 and 15 were removed. It would appear that the reference to the disc on post 9 was an error as that applied to Siding A from No. 2 road which remained available for use. However, Siding A is shown being abolished and the disc on 9 being removed three months later on 16 July 1981. At this time, post 13 was moved 20 metres to the fouling point with No. 1

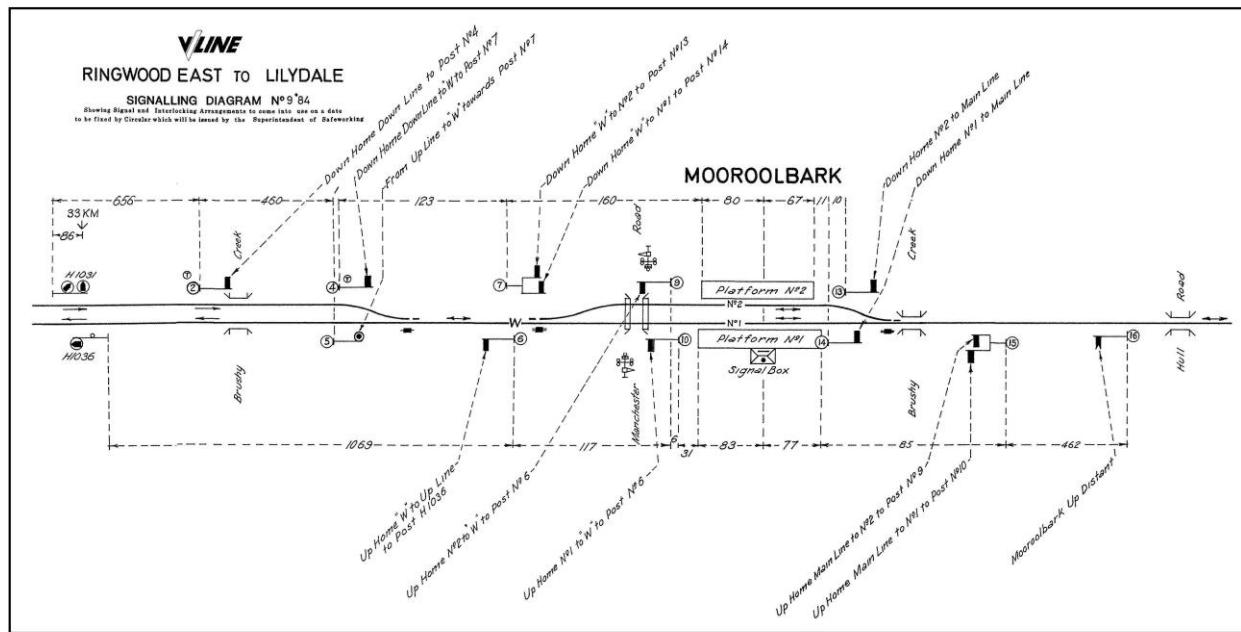
road and post 6, the up home signal protecting the turnout at the end of the double line, was moved 32 metres nearer the station presumably to allow for track works to take place for the forthcoming new track from the former down line into the station proper. The diagram below shows the situation in mid 1982 after these alterations.

On 3 July 1984, the absolute block working from Croydon was abolished with the introduction of three-position signalling, the down distant and up starting signals were also removed. This was also the date that the duplication was brought into service between Ringwood and Croydon and the Croydon signal box abolished after 71 years of service, Croydon having been interlocked on 17 January 1913. The Ringwood-Croydon section had been converted from miniature electric staff to single line three-position signalling in November 1973. The diagram on the next page shows the situation after three position signals had been provided from Croydon.

The push towards the completion of the resignalling and duplication into Mooroolbark continued and in September 1984, the end of double line was moved 65 metres nearer the station; presumably using the new crossover as an end of double line junction for the time being. That situation lasted for another nine months when finally the new layout was commissioned along with the three position signals in lieu of the miniature electric staff system on the single line to Lilydale on 29 June 1985. Diagram 1'85 at the bottom of the next page shows the situation after the down line had been extended into the station yard to serve the newly opened platform. It should be noted that more trains were extended to Mooroolbark from Ringwood but during the peak period, the single line to Lilydale is busy so a couple of these extended trains terminate at Mooroolbark.

A final change at Mooroolbark in the era we are interested in was the provision pedestrian gates at Manchester Road on 6 November 1991 presumably replacing the traditional zig-zag pedestrian crossing that served so well whilst people looked after their own safety



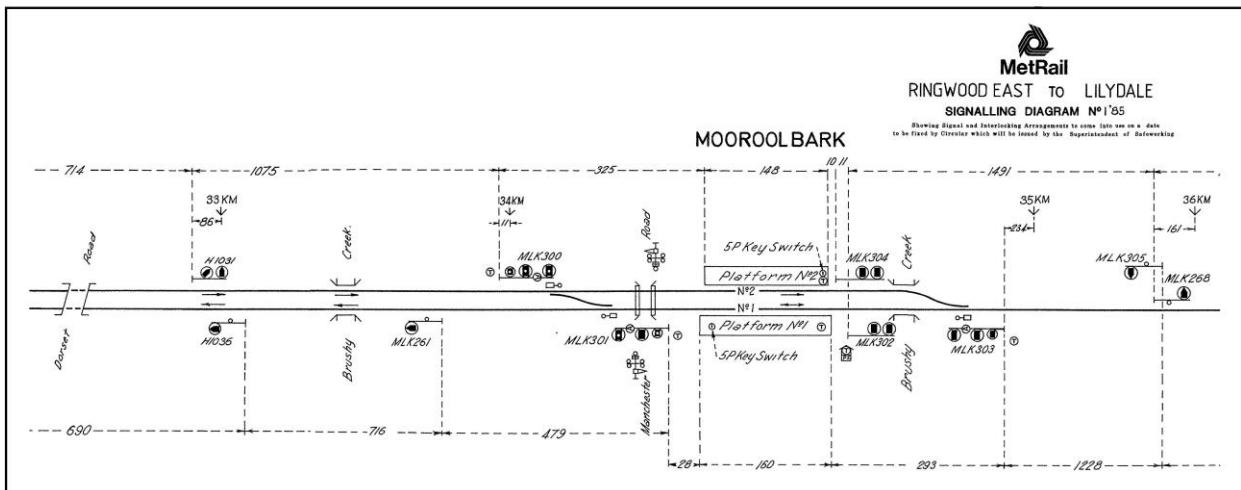


but in the days of many more distractions, something better was needed.

Now that we have the brief history out of the way, let's turn to some images that I took in October 1973 which nicely illustrate the arrangements at Mooroolbark after the provision of the double line from Croydon but before any changes at Mooroolbark had occurred or in fact even thought of.

However, it is timely to acknowledge the fact that not all the above research has come from my own collection

of resources. Local resident, fellow SRSV member, and railway researcher extraordinaire, Michael Guiney has considerably added to my knowledge of the area and the late Jack McLean will always be remembered for indoctrinating me into the business of railway history and operations. Acknowledgement is also made to the voluminous work by Keith Lambert and the late Alan Jungwirth in producing the Weekly Notice extracts.





(Above). Mooroolbark station building from the Melbourne end. The signal bay, added in 1922, is at the far end and the ladies' convenience at this end with a substantial waiting area located in between. The station sign on the light pole is one of those traditional black and white enamelled signs. Next to the signal bay can be seen the lamp room and in the distance is the parcels shed, both these buildings being standard designs. (Below). Looking from the level crossing towards Croydon, from here it can be seen how difficult the end of the double line was to see, no wonder the track indication panel was added. The buffer stops are at the end of Siding A and the signals are from left - the up home signal post 6, leading onto the up starter, post 3, in the distance. Then we have the set-back disc, post 5, from the up line and opposite the down home, post 4, both of which lead towards the bracket post in the foreground, post 7, which governs moves into the station proper.





(Above). A similar view to the front cover, but this time from Manchester Road. The train must be imminent as a couple of prospective passengers have turned up. In the goods siding is an open wagon possibly having been emptied of house-hold fuel by the local fuel merchant. (Below). Whipping out the telephoto lens we get a different perspective of the far end of the yard and the vehicles in No. 3 road are more easily seen. The vehicles beyond the open wagon appears to be Way & Works vehicles perhaps the painters bug-hut. Siding B can be sighted leading off the end of No. 2 road and post 13 has a disc for moves to this siding but no signal was provided for moves from the siding, a hand signal being sufficient.





(Above) Now having crept into the yard; well not really crept as in those days security was not as tight as today and employees even off duty ones could roam around provided they kept out of trouble. Couldn't be done today. Anyway in the foreground is ground disc post 11 which governs moves from No. 3 road to "X" and towards post 9. Note that there is no signal for moves along No. 2 road at this point it probably being deemed that the remainder of No. 2 road was too short to be of any separate use hence no signal. (Below). Ah here is that train dropping down the hill and passing Mooroolbark's up distant, that train being the one that had been signalled throughout the taking of these images. The train is something the likes of not been seen for some time now, a four car suburban block and a Harris to boot. Also three of the Harris cars have had the centre doorways removed in order to provide MORE seating for the passengers.



1890 VR BLOCK WORKING INSTRUCTIONS

A recent find was a very battered copy of the 1890 *Handbook of the Rules and Regulations, with description of, and directions for working the instruments, etc., used in the Telegraph Branch of the Victorian Railways*. A substantial portion of handbook deals with block working and is of interest as it fills in a gap between the first block working instructions, published in the Government Gazette, and later instructions published in the General Appendix in 1898. A list of amendments to the Handbook dated 15 May 1902 notes that "revised instructions for Block and other signal working are now issued by the Chief Traffic Mangr. (sic)"

Instructions for carrying out the Absolute Block System with Block Instruments.

INSTRUCTIONS FOR SIGNALLING.

DESCRIPTION OF INSTRUMENT

The block instrument consists of two dials, a plunger, a small black press button, a switch handle, and a bell or gong.

On the left-hand dial is a red needle referring to trains coming towards the station. It has two positions, pointing respectively to "Cleared" and "On line."

On the right-hand dial is a black needle referring to trains going from the station. It has two positions, pointing to respectively to "Cleared" and "On line."

The plunger is used for giving signals to the distant station. Each time the plunger is pressed, the bell or gong at the distant station will give one beat.

The switch handle has two positions, marked respectively "Off" and "On." The ordinary position of the switch handle is at "Off." It is placed at "On" immediately before giving the signal meaning "Line is clear," and it must remain in that position till the train arrives. On the arrival of the train, and immediately before giving the arrival signal, the switch handle must be placed at "Off." It must not be moved at any other time, except when the "Cancel line clear" signal is received.

All signals between two stations are given by the plunger, and are received by the bell or gong.

The needles serve to record the signals that have last passed, and thus indicate the state of the line as trains running over it. In order to move either of them from one position to another, the co-operation of the signallers at both ends of the section is always required.

The small black button in base of instrument controls the movement of the black "Train going to ..." Needle.

NOTE.- The black button must never be pressed except when giving "Line is clear" acknowledgement and "Arrival of train" acknowledgement signals, and when giving the speak on telephone signal after the acknowledgment of "Cancel line clear" signal has been received.

The signals must be given with great care and steadiness. The plungers must be pressed in gently but firmly, with a slight pause between each pressure to prevent confusion by the blending of one beat with

another. A still longer pause is required between the different parts of each signal. The first beats of the acknowledgement signals should be slightly prolonged.

All signals must be repeated until the proper acknowledgement is received.

If a signalman receive a signal which he does not understand, he must reply by giving the "Attention" signal, and stop any train coming from or going to the station that sent the unintelligible signal until he clearly understands it.

All signals, without exception, and the time they are sent or received must be entered in the train register book. Should a signal be neglected, the "Attention" signal must be given. The signalman will thereupon correct his omission.

OBTAINING "LINE CLEAR."

Give the signal 2 ("Is line clear"), or the signal 2.4 ("Is line clear for fast train"), when required for express or breakdown van trains, and enter the time of this signal in the train register book in column headed "Applied for line clear" on the proper page (Trains to Station). If the line is clear, the distant station will give the signal 3 ("Line is clear"), but if the line is not clear, he will give the signal 1.3.1., which must be acknowledged by repeating it. When the line is clear, the distant station will call your, and on obtaining attention will give the signal 3. Having received the signal, you must acknowledge it by giving the signal 1.1.1. ("Line is clear" acknowledgement), at the same time pressing the small black button. On giving the first stroke of this acknowledgment, your black "Train going to...." Needle will point to "On line," and will remain in that position until the train has arrived at the other end of the section, and the arrival signals have been exchanged."

The proper time to ask for "Line clear" is (after the section ahead is cleared) when you received the departure signal from the box in the rear at intermediate stations, or when the train is ready to start at terminal stations, except as hereafter provided. When a block section is short, and the "Distant" signal for a station is on the starting post of the station in the rear, "Line clear" must then be asked for from the station in advance as soon as "Line clear" has been given to the station in the rear, always provided the preceding train has been signalled off the section.

On giving the acknowledgement and seeing that your black "Train going" needle points to "On line," you must enter the time of the signal in the train register book, in the column headed "Line clear obtained" on the proper page.

As soon as the train starts or passes your signal box, you will give the "Departure" signal, which will be acknowledged, and you will then enter the time in the "Train left" column of the train register book.

"CANCEL LINE CLEAR" SIGNAL.

When "Line clear" has been obtained for a train which from any cause cannot run, the signal may be cancelled by giving 5.5.5. ("Cancel line clear" signal) to the signal box from which it was obtained, and the

signalman on receiving this signal will place his switch handle to "Off," and acknowledge by repeating it. The signalman in the rear will then give "Speak on telephone" signal 1, at the same time pressing the black button. This will move the needle to "Off," and at the same time call the signalman in advance to the telephone, who must then be informed as to cause of "Line clear" being cancelled. Full particulars to be entered in the train register book.

NOTE.- This signal must never be given except by the signalman who has received "Line clear" from the station in advance.

RECEIVING SIGNAL "ARRIVAL OF TRAIN."

The arrival of the train at the next station will be signalled back to you in the following way:-

On arrival of train with tail lamp, as per Regulation 180, the signalman will give 2.3.2 ("Arrival" signal). You will acknowledge it, and on giving the first beat of your acknowledgement, at the same time pressing the button, your black "Train going" needle will turn to "Cleared." (sic) Having given the acknowledgement signal, you will enter the time of this signal in the train register book, in the column headed "Line cleared" on the proper page.

Irregularities

If at any time your black "Train going to" needle fails to go to "On line" on giving the "Line is clear" acknowledgement, or to "Cleared" on giving the arrival acknowledgement, the signaller at the distant station may have omitted to turn his switch handle to "On" or "Off," or you may have omitted to press the button, as the case may be, before the signal, and your will in either case call his attention by giving the "Error" signal. After which the signals must again be exchanged, and if still your *black* needle does not obey the signals, you must consider the instrument out of order, and act accordingly.

GIVING "LINE CLEAR."

When a station requires to know if "Line is clear," the signalman will give the signal 2 ("Is line clear"), or 2.4 in the case of a fast train, and you must enter the time of this signal in our train register book in the column headed "Line clear applied for" on the proper page (Trains from... station). If the line is clear, turn your switch handle to "On," and then give the signal 3 ("Line is clear"), and when it has been acknowledged you will enter the time of this signal in your train register book in the column headed "Line clear given") on the proper page. If the line is not clear, keep the switch handle at "Off," and give the signal 1.3.1. ("Line is not clear"), which must be acknowledged by the distant station repeating it; and, as soon as the line is clear, you will, after obtaining the attention of the distant station, turn your switch handle to "On," and give the signal 3 ("Line is clear"), and when it has been acknowledged you will make the entry in the train register book, as instructed above. On the first beat of the "Line is clear" acknowledgement, your red "Train coming" needle will turn to "On line."

Irregularities

If the red "Train coming" needle does not turn to "On line" on the receipt of the "Line is clear"

acknowledgement, either you have omitted to turn your switch handle to "On," or the instrument is out of order. If you have omitted to turn your switch handle, the distant station will immediately find it out, and give the "Error" signal followed by the "Is line clear" signal a second time, when you must as instructed before, turn your switch handle to "On" and give the signal 3 ("Line is clear"). In case you have omitted to put the switch handle to "On," and if the distant station does not give the "Error" signal, you must call his attention to it by giving the "Error" signal yourself.

If, however, you have correctly placed your switch handle at "On" before giving the "Line is clear" signal, and still your red needle does not turn to "On line" when the acknowledgement signal is received, and if the signaller who asked for "Line clear" does not immediately send the "Error" signal, you must enter the time "Line clear" was asked for and the time it was given in the respective columns in your train register book, with a remark in the "Remarks" column as to the failure of the needle to go to "On line." You must also keep your switch handle at "On," and understand that the line is blocked until the train arrives at your station.

SIGNALLING ARRIVAL OF TRAIN.

When you are satisfied that the train has passed your "Home" signal post, as per Regulation 180, you will first turn your switch handle to "Off," and then give the "Arrival" signal; and, the distant station having acknowledged this by repeating it, you will enter the time of this signal in the column of the train register book headed "Cleared line" on the proper page ("Train from ... station). On the first beat of the "Arrival" acknowledgement signal, your red "Train coming" needle will turn to "Cleared."

Irregularity.

If the red "Train coming" needle does not turn to "Cleared" on receipt of the "Arrival" acknowledgement, either you have omitted to turn your switch handle to "Off" or else your instrument is out of order. If you have omitted to turn your switch handle, the distant signaller will give the "Error" signal, and you must then turn your handle to "Off" and again give the "Arrival" signal, which will be acknowledged by the distant station, and your red "Train coming" needle will turn to "Cleared." If, however, though you have properly turned your switch handle to "Off," your needle does not turn to "Cleared" on the receipt of the acknowledgement, you must immediately repair your instrument out of order.

INSTRUCTIONS FOR THOSE STATIONS WHICH REQUIRE TO "SWITCH OUT" AND "SWITCH IN" THE BLOCK INSTRUMENTS AT CERTAIN TIMES.

Giving the "Switching Out" Signal.

When a signalman is going off duty, and before he switches out the block instruments, he must first ascertain whether or not any trains are running in the sections on either side of his station, that both of the block instrument levers are standing at "Off," and also that all the needles are pointing to "Cleared." (See also Regulation 158.)

He will then give the prescribed "Switching out" signal, viz., 2.2.2.2.2. beats to the signalman on both sides of his station. When he has received the acknowledgements from both sides, he will carefully switch out the block instruments by turning the lever or levers of the "Cut-out" switch into the proper position marked "Out." The time of switching out signals were given and acknowledged must be entered in the "Remarks" column of the train register book referring to the respective stations.

NOTE.- Important. A signalman must never, on any pretence whatever, switch out the block instruments until he has received the acknowledgement of the "Switching out" signal from the signalmen on each side of his station.

Receiving the "Switching Out" Signal.

When a signal receives the "Switching out" signal from a station, if the section is clear between him and that station, he must immediately acknowledge the signal, and enter the time in the "Remarks" column of the train register book. He will then draw a line under the last entries referring to that station and write underneath this line the name of the station he starts to work with.

Giving the "Switching In" Signal.

When a signalman comes on duty, and before he switches in the block instruments, he must first ascertain by the telephone or otherwise whether or not there are any trains running in the sections on either side of him. When he has satisfied himself that the sections are clear, he will turn the lever or levers of the "Cut-out" switch into the proper position marked "In." He must immediately give the prescribed "Switching in" signal, viz., 1.2.2.1 beats, to the signalman on both sides of his station. He must enter the time of these signals, when they are acknowledged, in the "Remarks" column of the train register book referring to the respective stations.

Receiving the "Switching In" Signal.

When a signalman receives the "Switching in" signal from a station, if the section between him and the station he was working with previously is clear, he must immediately acknowledge the signal, and enter the time in the "Remarks" column of the train register book. He must then draw a line under the last entries referring to the station he was working with previously, and write underneath this line the name of the station he starts to work with.

BLOCK INSTRUMENTS ON A SINGLE LINE.

It must be distinctly remembered, when working block instruments on a single line, that "Line clear" must not be given for a train to come in one direction after "Line clear" has been obtained for a train to proceed in the opposite direction. Nor on any account must the switch handle be turned from "Off" to "On" until the "Arrival of train" signal has been received and acknowledged from the distant station, and the black "Train going to" Needle points to "Cleared," as if it is the instruments will not work. These regulations are not to interfere in any way with the working of the line on the "Train staff" system, the instructions regarding which

must be strictly adhered to. (See Regulations Nos. 466 to 486.)

IRREGULARITY DUE TO LIGHTNING OR CONTACT WITH OTHER WIRES.

No false current, whether due to lightning or contact with another wire, is able to move either of the indicating needles, but the apparatus may be put into such a state as to move the black "Train going" needle from one position to the other when you press your plunger to give a signal. If at any time, therefor, on pressing your plunger, your black "Train going" needle moves when you know it ought not to do so, immediately stop what you are about to sent (sic), and on obtaining the attention of the distant station, give the "Signaller's testing" signal. The signaller at the distant station will acknowledge this, and the needle will go back to its proper place.

If the needle moves when a train is on the section, the "Testing" signal must *not* be given, but the "Attention" signal must be given the second time, when the needle will be corrected.

INTERRUPTION OF COMMUNICATION

If, after calling some little time on the block instrument, you do not obtain attention, you must call the station you want on the telephone, and tell the signaller to attend; if after this you do not gain attention, you must report the block telegraph over that section to be out of order.

No reply is in all cases to be considered as indicating that the line is *blocked*.

Any irregularity that may occur must be entered in the "Remarks" column of the train register book, and reported at once to the Telegraph Engineer and Traffic Manager.

The block instruments are to be used only for train signalling, and under no circumstances whatever may they be used for any other purpose.

The telephones are to be used for communicating upon subjects other than for signalling trains, and under no circumstances may they be used for the purposes for which the block instruments are provided.

TESTING BY THE TELEGRAPH ENGINEER OR AUTHORIZED INSPECTOR.

First the "Testing" signal (4.4. beats) will be exchanged.

Then the Inspector will give the "Testing" signal, followed by the "Is line clear" signal (2 beats).

To this the distant station will reply by turning his switchhandle to "On," and giving the "Testing" signal, followed by the "Clear" signal (3 beats).

The Inspector will then give the "Testing" signal, followed by the "Acknowledgement."

The distant station will then turn his switch handle to "Off," and give the "Testing" signal, followed by the "Arrival" signal (2.3.2 beats).

The Inspector will then give the "Testing" signal followed by the "Arrival" signal.

The same signals will then be exchanged in the reverse way, namely:-

The distant station will give the "Testing" signal, followed by the "Is line clear" signal.

The Inspector will reply by turning his switch to "On," and giving the "Testing" signal, followed by the "Clear" signal, and so on.

NOTE:- The instruments must never be tested while a train is on the section.

INSTRUCTIONS FOR WORKING THE GOWER-BELL TELEPHONES
IN CONNECTION WITH THE BLOCK INSTRUMENTS.

To Call.

Should anything occur to make the use of the telephones necessary, give the "Warning" signal (1 beat) on the block instrument. This will be understood by the corresponding signalman as an intimation to speak on telephone, and will acknowledge by giving 1 beat.

To Speak.

When you hear the answering ring, take the *two* tubes off the hooks on each side of the telephone, and hold them close to your ears all the time you are speaking. Speak over the transmitter in a clear even undertone. Do not call out loudly, but, if you are not understood, speak slower, more distinctly, and nearer the diaphragm.

If at any time you can hear your correspondent, but he does not appear to hear you, speak into one of the tubes, when you will most likely be understood.

When you have finished speaking, be very careful that you hang the tubes back on the hooks, as your block instrument will not ring unless the tubes are hanging on the hooks.

Do not allow any hammering or knocking to take place about the telephone, or the transmitters will be injured.

Failing to get an Answer.

If you do not get an answer to your signal on the block instrument, look at once if the telephone tubes are hanging on the hooks, and also if the hooks are properly pressed down. If still you get no answer, take the tubes off the hooks and listen, for your correspondent's block instrument may be out of order, and he may be trying to speak to you.

NOTE.- *Important.* It must be distinctly understood that the telephones are only provided for cases of emergency, or if telegraph instruments are not available at the station. They must not be used at any time for the purpose of giving "line clear," but only to communicate necessary information. They must not be used either for talking upon any business, but what is strictly connected with duty; and the very greatest care must be taken that directly the telephones are finished with, the tubes, or receiving telephones, are properly replaced on their hooks.

INSTRUCTIONS FOR SENDING MESSAGES BY TELEPHONE

When sending a message, speak slowly and distinctly, making sufficient pause after every three or four words to allow the receiver to write them down.

In all cases the message must be repeated back by the receiver from his written copy, and the sender will be held responsible that the message is properly received from him.

After hearing the repetition, the sender will write upon the message the words "Repeated back, O.K." with his initials and the time.

GENERAL REGULATIONS FOR WORKING THE ABSOLUTE BLOCK
TELEGRAPH

The signalling of trains on the block telegraph system does not in any way dispense with the use of home, distant, inner distant, starting, advanced starting, siding, hand, fog, directing, or disc signals, whenever and wherever such signals may be requisite to protect obstructions on the line.

The object of the system of electric train signalling is to prevent more than one train or engine being between any two signal stations on the same line at the same time. This is accomplished by not allowing any train or engine to leave a signal station until the previous train or engine has been signalled as having arrived at or left the signal station next in advance.

Every train or engine, without exception, must therefore be signalled in its progress from block station to block station. The last vehicle on every train must carry a tail lamp by day as well as by night.

The block signal instruments and bells are exclusively for the signalling of trains, and must not under any circumstances be used for conversing or for any other purpose than block working in strict accordance with these Regulations, and they must only be used by the signalman or other person specially appointed for the duty.

The signal boxes at which the block telegraph working is in operation are furnished with instruments to signal for each line or rails, and the system under which these instruments are to be worked, and the mode of indicating the description of approaching trains, will be laid down in the Code of Regulations supplied to signalmen or exhibited in the signal boxes for the guidance of the person in charge.

On those portions of the line worked on the absolute block system, a second train or engine must not be allowed to enter a section until the preceding train or engine has been signalled as having passed out of the section, except under the circumstances specified in Regulations 188 and 189 to meet cases of train or telegraph failure. The danger signal must be exhibited at both the home and distant signals to protect trains or engines standing at stations or intermediate signal boxes; and, when any train or engine has gone forward into the onward section, the starting and advanced starting signals (where such are provided), which control the entrance of trains and engines into such section, must also be put to and kept at danger until telegraphic information has been received from the signal box in advance that the preceding train or engine has passed out of the section, and it is again necessary to lower them for a following train to pass after the prescribed telegraphic signals have been exchanged with the signal box in advance, or as the Regulations may require. So long as the starting signals stand at danger, the home and distant signals must also be kept at danger, except on the near approach of a train which has to stop at the station, when, after the speed of the train has been reduced so as to admit of its stoppage at the platform, the home signal may be taken off to admit the train, but the starting signal must be kept at danger until the line is clear to the next

signal station ahead. (See also Regulation 117, 118, and 121 in the Book of Rules.)

Unless special instructions be given to the contrary, the line must be considered clear, and the signal "Line clear" given immediately the last vehicle (with tail lamp attached) has passed the home signal post, except during foggy weather or snow storms, when the signal "Line clear" must not be sent to the signal box in the rear until the train or engine that has stopped at the signal box has passed the home signal and is proceeding on its journey or has been shunted into a siding clear of the main line.

Should it become necessary to block a section in consequence of a break down obstructing the line, or of other circumstances taking place rendering it imperative that any approaching train should be stopped, the signalman at the signal box where the obstruction takes place must use the means authorised by his Regulations for preventing any train leaving the post in the rear. Should there be reason to suppose that more lines than one are fouled, the signalman must, without any delay, use the means authorized by his Regulations for preventing any train approaching his post on any of the lines which are obstructed. (See also Regulation 248.)

No obstruction must be allowed outside the home signal until the signalman on duty has carried out the prescribed regulations to prevent any train leaving the signal box in the rear.

If a signalman observe anything unusual in a train during its passage, such as signals of alarm by a passenger, goods falling off, a vehicle on fire, a hot axle-box, or other mishap, except a train divided (for arrangements as to which, see Regulation 187), he must give to the signalman the signal box in advance the signal to "Stop and examine train," and must himself exhibit his signals so as to stop any train coming in the opposite direction; and the signalman at the signal box in advance must acknowledge such signal and immediately exhibit the danger signals to stop any train coming from or going towards the post from which the signal was received. The train, when stopped in obedience to the "Stop and examine train" signal, must be carefully examined and dealt with as occasion may require. Should any train going in the opposite direction have been stopped, it must be allowed to proceed after satisfactory evidence has been obtained that the line on which it is about to run has not been obstructed. Where practicable, the signalman must also telegraph the signal box in advance the cause of sending the "Stop and examine train" signal.

Should a train pass a signal box with a tail lamp missing or out, the signalman must not telegraph "Line clear" to the signalman at the signal box in the rear, but must call the attention of the signalman at the signal box on each side of him in the authorized manner, and on gaining attention must give the "Train passed without tail lamp" signal. This signal having been acknowledged, the signal at the rear signal box will thereupon stop the next train following, and verbally instruct the engine-driver to proceed cautiously towards the signal box in advance, informing why it is necessary that he should do so, and the signalman at the box in advance will act as directed in Regulation 183 (Book of Rules). As soon as the

train, the engine-driver of which has been cautioned, has passed the signal box whence the "Train passed without tail lamp" signal was received, the signalman there will recommence signalling in the ordinary manner. Should the signalman sending this signal have reason to suppose that there is any danger to a train travelling in the opposite direction, he must also stop that train and inform the engine-driver of the circumstances.

On single lines, should the next train to pass over the section be going in the opposite direction, the signalman must give the "Train Arrival" signal to the post from which the train has arrived, and obtain "Line clear" for the train going in the opposite direction. He *must* himself stop the train and inform the driver of the circumstances, instructing him to proceed cautiously so as to avoid *Danger* in the event of a portion of the train having been left on the line.

Should any vehicle or portion of a train be running back in the wrong direction, the signalman in charge must call the attention of the signalman at the next signal box towards which the vehicle or portion of the train may be running, by giving the prescribed signal indicating that vehicles are running back on wrong line. The signalman receiving this signal must stop any train about to proceed on the same line, and take such protective measures as may be necessary, such as turning the runaway train across to the other line or into a siding, as may be most expedient under the circumstances. In the event of a train being turned across to the other line, the signal "Train running away on right line" must be passed on to the next signal box.

If any vehicle or portion of a train has escaped and is running away in the proper direction on the right line, the signalman at the signal box in advance must be advised of the fact by the signalman at the signal box in the rear giving the prescribed signal indicating that vehicles are running away on proper line. The signalman in charge receiving this signal must arrange for the line on which the vehicles are running to be cleared, and, if necessary, send the signal forward and take such other measure as he may consider most expedient under the circumstances.

The "Train divided" signal is only to be used in the event of a signalman observing that a train has become divided and is running in two or more parts. If the train is running on a falling gradient, where the stoppage of the first part would risk a collision with the second part, the signalman receiving such signal must immediately exhibit the danger signal to stop any train going towards the post from which the signal was received; but if the line on which the divided train is running is clear ahead for it to run upon, he must not exhibit the signals to stop the first portion, but must give the engine-driver a green signal, either by flag or hand lamp, as occasion may require, waving the signal slowly from side to side. If the train is running on a rising gradient or where the line is level, the signalman receiving the signal must exhibit the danger signal to stop any train coming from or going towards the post from which the signal was received. The train, when stopped in obedience to the "Train divided" signal, must be shunted into siding as expeditiously as

circumstances will permit, or otherwise dealt with as may be necessary to prevent the second portion coming into collision with it. The engine-driver, on seeing the green signal waved slowly from side to side, will understand that his train is divided, and must exercise great caution by looking out for the second portion, until he is satisfied that the rear portion has been stopped or is running very slowly. He must, however, observe and obey any signals that may be exhibited against him. Should any train going in the opposite direction have been stopped, it must not be allowed to proceed until satisfactory evidence has been obtained that the line on which it is about to run is not obstructed.

In the event of any failure of the instruments or bells, so that the necessary signals cannot be forwarded and received, no train must under any circumstances be allowed to pass a signal box into that section of the line where the failure exists without having been previously brought to a stand, and the engine-driver and guard advised of the circumstances, unless the signalman is satisfied by personal observation that the line is clear. When this has been done, the engine-driver must be instructed to proceed cautiously to the post in advance, so as to be able to stop short of any obstruction there may be on the line. No train must be allowed to follow another within five minutes, and when a tunnel intervenes in a block section, not within ten minutes, unless the signalman on duty can satisfy himself that the tunnel is clear. Steps must be immediately taken to have the telegraphic apparatus put into working order again.

To prevent delays, break down van trains, when proceeding to clear the line, must in all cases be signalled as fast passenger trains, the signal "Shunt for passenger train" being given whenever the sections in advance are occupied by trains which the break down gang must pass to reach the scene of accident.

The same course must be adopted in the case of one engine proceeding to take the place of another that has failed, or of an engine, with or without a train, when sent forward to render assistance in cases of failure or accident to preceding trains, the engine-driver being allowed to enter the blocked section after having been brought to a stand and personally warned of the circumstances.

Should any obstructions occur necessitating the working of single line, and it is necessary to suspend the block telegraph working, this must be done only by an order in writing from the person in charge who arranges the single line working; but when a tunnel intervenes, or the gradients are heavy on the section of lines where the traffic has to be worked on a single line, block telegraph working must be maintained on such section, the up trains being signalled on the up line block telegraph circuit, and the down trains on the down line block telegraph circuit, or the pilotman must accompany every train passing over the single line.

On the working of the double line being resumed, any order suspending the working of the line by block telegraph is to be cancelled by written notice in the same manner and at the same time as the order for working single line is cancelled.

CODE OF SIGNALS

Signal.	No. of Beats.
Speak on telephone	1.
Is line clear?	2.
Is line clear for fast train?	2.4.
Line is clear	3.
Acknowledgement of ditto	1.1.1.
Line is not clear	1.3.1.
Acknowledgement of ditto	1.3.1.
Departure, Passenger	4.
Departure, Goods	1.3.
Departure, Ballast	2.2.
Departure, Engine	1.2.1
Acknowledgement of ditto	Repetition of same
Arrival	2.3.2
Acknowledgement of ditto	2.3.2.
Attention	2.2.2.
Acknowledgement of ditto	2.2.2.
Obstruction, danger	1.7.
Acknowledgement of ditto	1.7.
Obstruction cleared	1.5.1.
Acknowledgement of ditto	1.5.1
Train passed without tail lamp (to box in advance)	2.6.2.
Acknowledgement of ditto	2.6.2.
Train passed without tail lamp (to box in rear)	1.8.1.
Acknowledgement of ditto	1.8.1.
Stop and examine train	9.
Acknowledgement of ditto	9.
Error	5.5.
Acknowledgement of ditto	5.5.
Inspector's testing	4.4.
Signaller ditto	4.4.4.
Switching out	2.2.2.2.
Acknowledgement of ditto	2.2.2.2.
Switching in	1.2.2.1
Acknowledgement of ditto	1.2.2.1
Train divided	2.9.
Acknowledgement of ditto	2.9.
Train or vehicles running away on wrong line	1.9.1.
Acknowledgement of ditto	1.9.1.
Train or vehicle running away on right line	12.
Acknowledgement of ditto	12
Shunt for passenger train	15.
Acknowledgement for ditto	15.
Cancel "Line clear" signal	5.5.5.5.

SIGNALLING ALTERATIONS

The following alterations were published in WN 16/16 to WN 21/16, and ETRB A circulars. The alterations have been edited to conserve space. Dates in parenthesis are the dates of publication, which may not be the date of the alterations.

10.04.2016	North Bendigo Junction	(TON 71/16, WN 16)
	On Sunday, 10.4., Points 35 (164.885 km) were booked back into service. TON 63/16 is cancelled.	
13.04.2016	Oakleigh	(SW 103/16, WN 16)
	On Wednesday, 13.4., Sidings B & C were booked out of use due to track condition. Points 27U and 31U were secured normal using lockable point clips. This protection is in addition to that described in SW 80/16.	
(26.04.2016)	Heathcote Junction	(SW 130/16, WN 17)
	Circuit alterations were made so that the boom barriers at Escrites Rd (53.718 km) will continue to operate with a Down train standing in the platform. The advisory sign at the Down end of the platform that applied to stopped trains was abolished. Amend Diagram 63/13 (Heathcote Junction – Kilmore East).	
(26.04.2016)	Ringwood & Bayswater	(SWP 3/16, WN 17)
	Burnley Group Operating Procedure 8 (Ringwood and Bayswater Failure of signals) was reissued. The alterations were the provision of voice recording at Ringwood to allow the transmission of Caution Orders by telephone, and the inclusion of procedures dealing with the failure of main line signals at Bayswater.	
(26.04.2016)	Bayswater	(SWP 4/16, WN 17)
	Burnley Group Operating Procedure 9 (Bayswater train maintenance facility and stabling siding) was reissued. The alterations were the removal of procedures dealing with the failure of main line signals, and the addition of a new clause h (Bayswater procedure for booking out of Electro-Hydraulic points – Train Maintenance facility).	
26.04.2016	Ouyen	(TON 80/16, WN 18)
	On Tuesday, 26.4., No 5 Road was booked out between 508.684 km and 508.951 km (the Up half) due to construction activities. The points at each end of the booked out section have been secured to prevent rail access.	
02.05.2016	Edithvale – Chelsea	(SW 110/16, WN 17)
	On Monday, 2.5., Up Automatic F1024 was converted to LED.	
02.05.2016	Bonbeach	(SW 109/16, WN 17)
	On Monday, 2.5., Up Automatic F1088 was converted to LED.	
04.05.2016	Middle Creek	(SW 31/16, WN 18)
	On Wednesday, 4.5., boom barriers were provided at the passive crossing at Goulds Lane (179.514 km). The frangible gates and signage (SW 17/13) were abolished. Remote monitoring equipment was provided. Amend Diagram 22/15 (Wendouree – Beaufort).	
12.05.2016	Lethbridge	(SW 35/16, WN 20)
	On Thursday, 12.5., mirrors were provided at Lower Plains Rd (102.626 km). The mirrors are provided to assist drivers of road vehicles to see approaching trains.	
(24.05.2016)	North Bendigo Workshops	(SW 36/16, WN 21)
	Operating Procedure 107 (North Bendigo Workshops) was issued to describe the main line connections and the procedure for operating rail movements between the siding and the running line.	
(24.05.2016)	Broadford	(SW 40/16, WN 21)
	Effective forthwith Broadford is not to be switched in as a double line block post.	
26.05.2016	Ballarat – Ararat	(SW 44/16, WN 21)
	Effective 1800 hours on Thursday, 26.5., the Train Staff section Ballarat – Ararat was replaced by Wendouree – Ararat. A replacement Train Staff was provided, but the existing Train Staff Ticket boxes were retained and relabelled. SW 42/16 is cancelled.	
27.05.2016	Corio	(TON 106/16, WN 22)
	On Friday, 27.5., Points 39W in the Corio Independent Goods Line were booked out of service and secured in the normal position.	

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