-- SIGNALLING RECORD SOCIETY (VICTORIA) --
SOMERSAULT
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Editor: David Langley, Crichton Street, Avenel, 3664.

Dead line for July 1980 issue is 29 June 1980.
NEXT MEETING: Friday, 16 May 1980.
VENUE: A.R.H.S. Library Room, Windsor Railway Station.

MINUTES OF MARCH 1980 GENERAL MEETING

HELD AT: A.R.H.S. Library Room on Friday, 21 March 1980. The meeting commenced at 2015 hours.

PRESENT: Jack McLean (Leader), Jim Brough (Minutes Secretary), David Langley (Editor & Archivist), Wilfrid Brook, Alan Cohn, Graeme Inglis, Alan Jungwirth, Keith Lambert, John McCallum, Stephen McLean, Colin Rutledge, John Sinnatt, Andrew Wheatland, Bob Whitehead and Rod Smith.

MINUTES OF PREVIOUS MEETING: The Minutes of the last two meetings were adopted as read. (Jungwirth/Whitehead).

BUSINESS ARISING: Alan Jungwirth (Chairman of the Show Day Tour Sub-Committee) reported that he had co-opted Jack McLean to the sub-committee.

CORRESPONDENCE: Our beloved leader reported that he had written to "Taffy" in Sydney authorising him to arrange for SRSV copies of the British Newsletter to be produced in Sydney along with the NSW copies.

GENERAL BUSINESS:

1. As the Treasurer was absent on leave, it was decided to hold over until May the Annual General Meeting for 1980.
2. Jack McLean reported that he had consulted Alan McKenna on the subject of track locked crossing stations and that as far as Alan knew, at all of them, the arrival signal was dependant on the track being clear at least as far as the opposing arrival signal. If anyone knows or thinks he knows of an exception to this, would they please refer it to Jack or Alan.
3. Alan Jungwirth read a newspaper extract describing the proposed CTC arrangements for the Ararat to Serviceton. Details appear elsewhere in this issue.
4. Alan Jungwirth also reported on a recent trip on 8134 which almost arrived on time. (8134 is the 1445 Up passenger train from Horsham.)
5. John Sinnatt (using a diagram kindly supplied) was able to answer his own question from last month regarding the Down Home Arrival signal at Maitland-street/Geelong "A" Box.
6. Alan Cohn expressed his delight with his recent experience of the punctual running of trains in Switzerland recently.
7. Bob Whitehead raised a query later in the evening about the invention of Staff &

Ticket. It is generally regarded as being first introduced by the London & North Western Railway in 1853. Jack McLean has since unearthed an article on the subject written in 1887 and it will appear in SOMERSAULT, the first part appears in this issue.

SYLLABUS ITEM: Wilfrid Brook showed us some more of his slides of signals which he took mainly in England while he was supposedly pursuing his medical vocation. We saw Abbotts Ripton, slotted signals, crossbars, discs and all manner of means to indicate to Drivers when they could go, where they should stop and which way they were going. (How did Jack McLean recognise that upper quadrant signal at Keadby?) Discussion took place (all the time!) certainly after the majority of the slides, and a most interesting evening it certainly was. Thankyou Wilfrid - may you bring back some more when you go to Canada in July.

MEETING CLOSED: at 2155 hours but discussion continued for a while after.

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SIGNALLING ALTERATIONS

30.1.1980 MACLEOD-GREENSBOROUGH. The warning bell at the former Williams Road level crossing was removed.

31.1.1980 PRAHRAN-WINDSOR. The following semaphore signals were replaced by light signals:- B199, B200, B210, B222, B233 and B246.

7.2.1980 OFFICER-PAKENHAM. Flashing lights were brought into use at Cardinia Road level crossing at MP 32 + 905 metres.

10.2.1980 WODONGA. Dwarf signal No 11 was moved 64 metres in the up direction.

14.2.1980 LALOR. Boom barriers were added to the flashing lights at Paschke Crescent level crossing.

14.2.1980 WARRAGOON. The up end staff locked points were relocated 76 metres in the up direction. No 2 road will be abolished.

15.2.1980 BALACLAVA-RIPPONLEA. The following semaphore signals were converted to light signals:- B251, B258, B263 and B270.

25.2.1980 FLINDERS STREET-SPENCER STREET-NORTH MELBOURNE. Signalling diagrams Nos 7'80 (Flinders Street-North Melbourne) and 9'80 (Flinders Street) became

renamed Northern Loop Viaduct line (former Up line) and Caulfield Loop Viaduct line (former Down line). Automatic signals W24, W25, W29, W30, W34, W42 and 307 were taken out of use. Automatic signals W21, W47, W51 and E51 were re-numbered 497, 683, 705 and 817 respectively. New automatic signals Nos 495, 497 and 569 (Northern Loop Viaduct line) and 684, 686 and 688 (Caulfield Loop Viaduct line) were provided.

FLINDERS STREET

The signals on posts 12, 13, 14, 15 and 16 were abolished, controlled signals 150 and 330 were taken out of service. Points 11, 13, 14, 25, 59, 60 and 248, plungers 12 and 251, and pilot levers 15 and 16 were abolished. Points 227 and 471 were spiked normal. New Home signals 143 and 149, dwarf signals 138 and 141 were provided.

SPENCER STREET No 2 BOX

A new Down Home signal 567 was provided for the Northern Loop Viaduct line and points 12 and 466 were spiked normal. Controlled signals Nos 123, 125, 303 and 305 were taken out of service.

The Northern Loop Viaduct and the Caulfield Loop Viaduct lines are presently not available for two-way running. The Northern Loop line is used for up trains and the Caulfield Loop line is used for down trains.

26.2.1980 WARRAGOON. The Hand Locking Bar, Pin and Padlock at the down end was replaced by a large pattern staff lock. A scotch block is provided in the siding.

28.2.1980 THOMASTOWN. Boom barriers have been added to the flashing lights at the Heyington Avenue level crossing.

3.3.1980 ST JAMES was closed as a Staff & Ticket station, the new section becoming Benalla B-Yarrawonga. The fixed signals, plunger locking and No 2 road will remain and the station may be opened as a temporary Staff & Ticket station as required.

4.3.1980 INGLEWOOD. Post 10 and points No 18 were abolished.

6.3.1980 MITTYACK. The hand locking bars at both ends have been replaced by staff locks. Scotch blocks remain in use on the siding.

WN13/1980 BALLARAT. Signalling diagram No 8'80 became effective and diagram No 4'74 is cancelled.

WN13/1980 NEWPORT-NORTH WILLIAMSTOWN-ALTONA. Signalling diagram No 3'80 became effective and diagram No 12'76 is cancelled.

WN13/1980 NEWPORT. Coopers Siding, formerly at North Williamstown, is now located off Siding C at Newport. The points leading to the siding are fitted with a WSa lever.

12.3.1980 MOAMA was closed as a Staff & Ticket station, the new section becoming Echuca-Barnes. The Bank Engine Key was abolished. The signals and plunger locking will be retained for the time being.

12.3.1980 BENALLA. Flashing lights were brought into service at Cemetery Road level crossing at MP 119 + 396 metres. The operation is automatic for all movements.

13.3.1980 FISH CREEK. The Divided Staff, in the Meeniyan to Foster electric staff section, for Fish Creek was abolished. The signals and plunger locking at Fish Creek were abolished and the main line points are now secured by annett locks. Staff/Annett Key exchange apparatus was provided. No 2 road was also abolished.

14.3.1980 DANDENONG. Dwarf signal No 26 was converted to a light signal.

WN13/1980 SPRINGHURST. Signalling diagram No 6'80 became effective and diagram No 8'50 is cancelled.

WN13/1980 NORTH BENDIGO JUNCTION. Signalling diagram No 4'80 became effective and the remaining portion of diagram No 6'69 (Bendigo C and D Boxes) is cancelled.

WN14/1980 DANDENONG-HALLAM & LYNDHURST. Signalling diagram No 6'79 is effective and diagram No 8'69 is cancelled.

WN14/1980 SUNBURY. Commencing forthwith, the Block Terminal conditions for Up trains at Sunbury has been abolished.

19.3.1980 PANMURE. The flashing lights at Naringal Road were removed and the crossing closed due to the construction of the Princes Highway overpass.

19.3.1980 SOUTH GEELONG. Bracket post 5 was replaced by a straight mast, post 5, and on which is erected the up distant for the Warrnambool line. Lever 17 was removed from the frame.

19.3.1980 KERANG-SWAN HILL. The Electric Staff system between Kerang-Lake Boga and Lake Boga-Swan Hill was withdrawn and replaced by one section of Train Staff and Ticket; Kerang-Swan Hill. The fixed signals and plunger locking at Lake Boga will be retained and Lake Boga may be opened as a temporary staff station as required.

20.3.1980 WODONGA-COAL SIDINGS. Signalling diagram No 10'80 became effective and diagram No 6'78 is cancelled. Flashing lights were brought into service at Laurence Street level crossing at MP 187 + 763 metres on the Bandiana line. Signal 106, formerly for up broad gauge trains only, was moved to the down side of the level crossing and now applies for trains of both gauges. Lever 106 (Wodonga A) is still used for broad gauge moves, the "V" light being illuminated whilst new lever 108 (Wodonga A) is used for standard gauge trains and the "S" light will be illuminated. In addition to lever 108, lever 32 (Coal Sidings Box) also needs to be reversed to clear the signal for standard gauge moves. A new signal, post 20, has been provided to control down standard gauge movements over the crossing (and the dual gauge junction),

broad gauge movements are already controlled by existing signal 102. Post 20 is worked from Coal Sidings Box.

26.3.1980 MYRTLEFORD-BRIGHT. The Staff Ticket Boxes have been removed for this section. All trains must now carry the staff when traversing this section.

WN15/1980 Not issued due to Easter holidays.

27.3.1980 OFFICER. Flashing lights have been provided at Brunts Road level crossing at MP 29 + 1441 metres.

2.4.1980 LOCH. The staff locked Stock Siding was abolished.

20.4.1980 CAULFIELD. Signalling diagram No 32'79 became effective and diagram No 6'74 is cancelled. Up Home signal No 27 was abolished and replaced by a Up Home (light) signal 172 metres in the down direction. The Down Dwarf signal No 34, from No 4 road, was replaced by a light dwarf on the right hand side of the line. A new Up Home signal No 36 was provided and dwarf signal No 50 was converted to a Down Home (light) signal. The medium speed warning aspect on Home signals 59 and 61, automatic signals D362 and F364, and the normal speed warning aspect on automatic signals D319 and F319 are approach operated. A speed proving train stop was provided for movements from the Dandenong and Frankston lines towards signal No 36. The roads through the station, Nos 1 to 6, were renumbered 1, 1A, 2, 3, 3A and 4 respectively.

20.4.1980 EDITHVALE & BONBEACH. The signal control panels were moved into the new station buildings.

WN18/1980 FLINDERS STREET. The Contractors Work Site Siding, located off the lead to the Through Siding will be taken out of use and abolished.

WN18/1980 KANGAROO FLAT & GOLDEN SQUARE. Commencing forthwith, these stations will only be switched in as arranged by the Train Controller.

23.4.1980 PIMPINIO. Lock bars 9 and 10 were abolished and replaced by lever locks and track circuits. The plungers providedinlieu are worked by lever 10.

23.4.1980 SANGER. The Hand Locking Bar on the up end points was replaced by a large pattern staff lock.

28.4.1980 SUNSHINE. Route indicators have been provided on home signals 30 and 38. The indications displayed on signal 30 are: A (to Albion), N (to Ballarat via North line) & S (to Ballarat via South line), and on signal 38: N (to Ballarat via North line) and S (to Ballarat via South line).

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SAFEWORKING ON SINGLE LINES
by John Sinnatt.
(continued from March 1980)

A Staff is usually withdrawn from the instrument as soon as possible even though it might be some hours before the train is due. This gives an opportunity to effect repairs or institute emergency working in case the instruments have failed. At stations where the signalman is permitted to go off duty before the train arrives, a STAFF EXCHANGE BOX, fixed on the outside wall, may be used to avoid the Guard having to gain access to the office.

Before going off duty, the signalman inserts and locks the Staff for the forward section in the box. When the train arrives, the Guard or Driver, inserts the Staff for the rear section, which unlocks the Staff for the forward section, for use by the train. When the signalman resumes duty, he unlocks the box using a special releasing key and places the Staff in the correct instrument. Exchange Boxes may also be used on lines worked under the Train Staff and Ticket system

Unless specially authorised, a different staff must be used for each train, the staffs being issued in rotation e.g. when two trains cross the staff must not be transferred from one train to the other, but must be placed through the instrument. In recent years there have been many authorisations of the use of the same staff by more than one train when crossings are not to be effected, to avoid a signalman having to come on duty, e.g. an up Sunday Excursion train may be permitted to use the same staffs as the down train, the staff remaining in the Exchange Boxes at the various stations, or, if these are not provided, in the pockets of the instruments.

Electric Staff may be regarded as the usual (but not invariable) method of safeworking on main lines in Victoria, for which purposes it is clearly more suited than Staff and Ticket.

In the basic electric staff system, an officer must be in charge of every staff station and must be in attendance as required for the running of trains. However, a place really needs to be fully attended only when trains have to be able to approach from each side simultaneously and cross there. If this condition applies only at certain times, then economies in operation might be achieved if at other times the station could be reduced or overtime payments eliminated. Various facilities and methods of working are available with the system to allow a staff station to be attended only part of the time, or even not at all, and also allow a non-staff station (presumed to be unattended) to perform a useful function if required. These facilities will now be described but the various procedures are not necessarily covered in full detail.

STAFF EXCHANGE BOX: As explained earlier, a signalman may be permitted to be off duty during the passage of certain trains, these trains being worked through on the Staff Exchange Box (SEB) by the Guard or Driver. For example, the 1245 a.m. Fast Goods from Benalla to Wodonga on Tuesday to Saturdays is worked through every station on the way by this means excepting Wangaratta and Bowser (which is switched out - see below). As further explained, two successive trains travelling in opposite directions may run on the same staff if specially authorised, the Exchange Box being used at the intermediate stations. For example, the Four passenger trains running on Saturdays between Geelong and Warrnambool, are authorised to run on the same staffs between South Geelong and Warrnambool, the staffs being kept in the SEB

or pockets of their respective instruments when not being used.

SWITCHING OUT: Provision can be made for a staff station, B, to "switch out". The section would then extend from A to C, a separate pair of staff instruments being required. A special switching instrument is also provided at B. Briefly, in order to close, B obtains a staff for each of the sections A-B and B-C, turns a special key switch provided from "In" to "Out", and places the staffs in the switching instrument. He then turns a handle thereby locking the staffs in. The circuit of the through staff line is now made, and a staff for the section A-C can now be withdrawn at either end. Before going off duty, B clears his home signals for both directions.

To open again, B ascertains by telephone that the through section is clear, places his signals to stop, and turns his key switch to "In". A and C hold down the bell keys on their through instruments, and provided no staff is out an electric lock on the handle of the switching instrument will be released. The handle is then turned and the short section staffs removed and placed the their proper instruments. Turning the switching handle will also cut out the through circuit for the A-C instruments, rendering them inoperable. Special bells signals are used as appropriate during the switching in and out procedure.

SWITCHING OUT INTERLOCKED STATIONS: Where the levers at B are interlocked such that the up and down signals cannot be cleared together, special arrangements are made to free the interlocking when the station is switched out. A closing lever is provided instead of the switching handle and when the A-B & B-C staffs have been placed in the switching instrument, the closing lever can be pulled over halfway. This secures the staffs and also enables the main line signals for both directions to be cleared. After the distant signals have been cleared, the closing lever can be operated fully reverse. It then becomes electrically locked and cuts in the through staff line. The lock on the closing lever is released when the Key Switch has been turned to "In" and A and C hold down their bell keys. The lever can then be put back half way and all the signal levers restored to normal. The closing lever can then, itself, be put fully normal and the A-B & B-C staffs released from the switching instrument.

Switching out has found considerable use in Victoria, although not in other states, the most extensive applications here being seen on the Port Fairy line beyond Geelong, and the Serviceton line beyond Ballarat. On the first named line the staff stations are as follows (those that can switch out being shown in brackets): Geelong, South Geelong, Moriac, (Winchelsea), Birregurra, Colac, (Pirron Yallock, Pomborneit), Camperdown, Terang, (Panmure, Allansford), Warrnambool, (Illowa), Koroit and Port Fairy. Stations shown within the same bracket switch in and out together by a special procedure.

Staff stations on the Serviceton line are: Linton Junction, (Windermere), Burrumbeet, (Trawalla), Beaufort, (Middle Creek), Buangor, Ararat, [(Armstrong) Great Western], Stawell, (Deep Lead), Glenorchy, (Wal Wal), Lubeck, Murtoa, [Jung (Dooen)], Horsham, (Pimpinio), Dimboola, (Kiata), Nhill, (Diapur), Kaniva and Serviceton. Here, Armstrong switches out before Great Western and Dooen before Jung, i.e. there are three staff instruments at Horsham for the upside, one for Dooen, one for Jung and one for Murtoa. (There are also two for the down side.) All the stations

Another advantage is that successive trains can be run in the same direction without anyone being in attendence at the intermediate stations.

AUTOMATIC WORKING: In the normal method of working a staff section A-B, A can obtain a staff only whilst B is holding down his bell key and vice versa, so that there must be a signalman at the other end of the section. However, an "automatic operator" can be provided such that the distant station can be unattended at all times. If automatic working is in force at B, and A wishes to obtain a staff, he first must holds down his bell key for a few seconds, then releases it. This actuates the automatic operator at B and current is sent back over the line to A just as though there were a live signalman at B holding down his key. The current rings a trembler bell at A (the normal single stroke bell would obviously be unsuitable) and a staff can then be withdrawn, which action stops the bell ringing. When a staff is required at B, this is obtained by the Guard of the train in the usual manner, A holding down his key. When trains cross at B it is not necessary for the staffs to be placed through the intruments - this avoids delay in the case of failure. The Guard of the first train to arrive collects the staff from his Driver and exchanges it with the second Driver. The second train must, however, stop while its guard makes entries in the Train Register Book and sends the departure signal.

The advantage of automatic working over switching out is that the station is available at all times for crossing purposes. On the other hand, even trains that would normally run express must stop while the Guard works the instruments. Automatic working is used extensively in some other states as an alternative to switching out but the only applications in Victoria at the time of writing are at Mysia between Korong Vale and Boort, and at Barraport between Boort and Quambatook. It is understood, however, that this form of working is to be introduced in the future at most stations on the Gheringhap-Cressy-Maroona line.

At Mysia and Barraport, upper quadrant automatic signals, showing Stop and Warning indications only, are provided instead of home signals and each is proceeded by a Location Board situated about 600 yards in the rear. Otherwise the arrangements are generally the same as at non-interlocked crossing stations, excepting that the points and plunger locks (hand operated) are electrically detected. When an arriving train passes the Location Board, the signal goes from Stop to Warning provided that the track is clear to the opposing Location Board and the points and plunger locks are correctly set. If the train is to go direct into No 2 road, it comes to a stand inside the signal while the fireman sets the points. If the signal is at Stop owing to another train being there, it can be passed in accordance with the regulations governing automatic signals. After a train departs from No 2 road, it is important that it stops while the Guard re-sets the points and plunger, otherwise the signal will not clear for the next arriving train. Difficulty has been experienced because of this in the past, an electrical failure being alleged whereas the fault was in fact with the operating staff.

Recently new instructions have been issued which allows for no signals at all being provided at an automatic staff station. The points are also not locked in any way, and may be left set for No 2 road by a departing train. Successive stations may be automatic, which has not been the case in the past. Shunting must not take place outside the outer facing points unless the Driver

is in possession of the staff.

Under these new instructions, which it is believed will apply to the Cressy line, a Board lettered "P" in luminous paint is provided at the points and a Location Board provided about 700 yards out. The Driver of every approaching train, whether due to cross or not, must reduce speed to 10 mph on sighting the Location Board and come to a stand at the points. The fireman takes the staff, sets the points if necessary, and steadies the lever while the train passes over. He then hands the staff to the Guard who goes to the office and rings the Train Controller. If so instructed, and the train is not crossing, the Guard places the rear section staff in the instrument and withdraws the one for the forward section. He hands this to the fireman who takes it to the Driver. The train may then proceed.

When trains cross, the roads which down trains and up trains are to take are specified for a particular station. Train crews are supposed to know whether they have to cross or not from the timetable or from advice received from the train controller at the previous station.

An employee may be on duty during certain periods of the day, in which case he presumably exchanges staffs with the Driver when the train stops at the points, and then steadies the lever while the train passes over. When a man is not on duty it would appear that a through train which would otherwise be non-stop will loose about 15 to 20 minutes working through the station.

INTERMEDIATE INSTRUMENTS: Where the junction B with a branch line is in the middle of a section A-C and main line trains are not normally required to cross at B, in intermediate electric staff instrument may be installed to avoid the necessity of a signalman. Only one staff may be out of the three instruments at the one time and trains cannot approach B simultaneously from A and C. The points are staff locked and when the train from A or C is clear of the main line at B, the Guard places the staff in the instrument and advises A by telephone that the train is clear of the main line (no bell or key is provided on the instrument). When the train is ready to return to the main line at B, the Guard rings A for permission, A and C exchange bell signals and if they agree that the train may proceed, both hold their bell keys down. The Guard can now withdraw a staff provided none is already out.

Intermediate instruments are provided at the junctions for the Maldon, Mortlake, Timboon and Waubra lines, amongst other places. An up home signal is provided for the branch line but no signals for the main line. Intermediate instruments may also be provided at sidings where trains or pilots terminate or where shunting is required to take place while main line trains run through. One was provided last year, for example, at the new cement company's siding at Waurn Ponds between South Geelong and Moriac. Two intermediate instruments may be provided in the one section and in the case of Wodonga-Huon there are three; one at Bandiana/Bandiord Sidings, one at Bandolier Sidings and one at Wodonga Coal Sidings signal box. The latter enables NSW trains to proceed to the standard gauge sidings on the Cudgewa line via the dual gauge line.

COMPOSITE ELECTRIC STAFF. A special "Composite Staff" divisible into three portions may be provided to allow one or two following trains to enter a section before the first has reached the other end. Although Time Interval working is authorised in a few cases, an intermediate station (either a non-staff station or a switched out staff station) is normally established as a Block Post. This is worked by the Guard much as described under the

Train Staff and Ticket System. Perhaps the best known Intermediate Block Post, which however, had to be manned by a signalman and applied to down trains only, was BANK BOX between the former stations of Rowsley and Ingliston. Faster running caused Bank Box to decline in importance in later years and it finally became redundant when automatic signalling was installed between Bacchus Marsh and Ballan. The name is, however, perpetuated in the remotely controlled BANK BOX LOOP located nearby.

DIVIDED STAFF: Another type of special electric staff, known as a "Divided Staff" and divisible into two portions, mat be provided to enable an intermediate station B to be opened for crossing purposes as a Temporary Train Staff and Ticket station between A and C. This might be done when traffic conditions do not warrant provision of staff instruments for A-B and B-C even with switching instruments at B. One half of the Divided Staff becomes the Train Staff for the section A-B and the other half that for the section B-C. Meanwhile electric staff working for A-C is suspended. Yarra Junction, formerly a full staff station, is now opened as a Divided Staff station on Tuesdays and Thursdays for the running of the Warburton Goods. Yarra Glen may be opened on Wednesdays for the Healesville Goods, although, this is not essential. Bendigo Racecourse platform on the Echuca line may also be opened as a Divided Staff station - this is done presumably only on race days.

BANK ENGINE KEY: Unlike the facilities described earlier, this does not avoid unnecessary manning of stations, but its use is described here for convenience. A bank engine may be required to assist a train in the rear for a short distanve into the section and then return to its station. To ensure that a second train will not enter the section if the bank engine breaks down and fails to return by the time the train it has assisted has travelled through the section and the staff place in the instrument at the distant end, a Bank Engine Key may be provided. The Key, which is carried by the Driver of the Bank Engine, is kept in a switch lock and when withdrawn, the staff line is broken and even if the staff is replaced, another cannot be obtained until the key has been returned to the switch.

(to be continued)

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ARARAT TO SERVICETON CTC PROJECT

The following information was gleaned from a well known railway staff newspaper and has been supplied to us by Alan Jungwirth.

LOCATION	REMARKS
ARARAT	B Box to be abolished and extensive track alterations to down end of yard.
213 Km	New 1650 metre CTC crossing loop.
ARMSTRONG	Closed - all facilities removed.
GREAT WESTERN	Becomes an unattended siding.
233 Km	New 1650 metre CTC crossing loop.
STAWELL	Both signal boxes abolished. Becomes a siding for local traffic only.
DEEP LEAD	Closed - all facilities removed.
254 Km	New 1650 metre CTC crossing loop.
GLENORCHY	Becomes an unattended siding except during the wheat season. This man would not attend to any train working except for shunting.
WAL WAL	Closed - all facilities removed.
LUBECK	Becomes a CTC crossing loop and unattended siding except for Bolangum line supervisor.
MURTOA	Signal box abolished and extensive yard alterations to enable main line trains to pass through without hindering yard operations. A local panel to be provided.
303 Km	New 1650 metre CTC crossing loop.
JUNG	Becomes an unattended siding.
DOOEN	Becomes an unattended siding.
HORSHAM	Existing loop converted to CTC operation with local panel for use as required.
DAHLEN SIDING	Remains an unattended siding.
PIMPINIO	Becomes an unattended siding.
348 Km	New 1650 metre CTC crossing loop.
WAIL	Remains an unattended siding.
DIMBOOLA	Signal box abolished. Yard alterations to be carried out. Modified facilities will exist for crossing trains. A local panel to be provided for use as required.
GERANG GERUNG	Remains an unattended siding.
KIATA	Remains an unattended siding.
SALISBURY LOOP	Becomes a CTC crossing loop.
SALISBURY	Remains an unattended siding.
NHILL	Becomes a siding for local traffic only.
TARRANGINNIE	Remains an unattended siding.
DIAPUR	Becomes a CTC crossing loop.
MIRAM	Remains an unattended siding.
KANIVA	Becomes a CTC crossing loop with unattended siding for local traffic.
LILLIMUR	Remains an unattended siding.
SERVICETON	Extensive alterations at up end of yard to interface with the CTC, signal box to be retained at this stage. In the long term, it may become a CTC crossing loop with a siding for local traffic.

1980-1983 - extended loops and CTC Ararat to Serviceton.
1983-1986 - CTC Sunshine to Ararat.
1981 - Bank Box extended.

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BREIF NOTES ABOUT THE SIGNALLING SYSTEM AT FYANSFORD
Australian Portland Cement Company's Line

An elementary automatic signalling system was installed on the line by McKenzie and Holland in 1947. The following description and diagram are based on a copy of the company's "Traffic Code". The system is now out of use but most of the signals are still in place. Some seem to be in different positions from those shown on the diagram and two separate Departure signals were provided at the Works end, but the general principles of operation were no doubt as described.

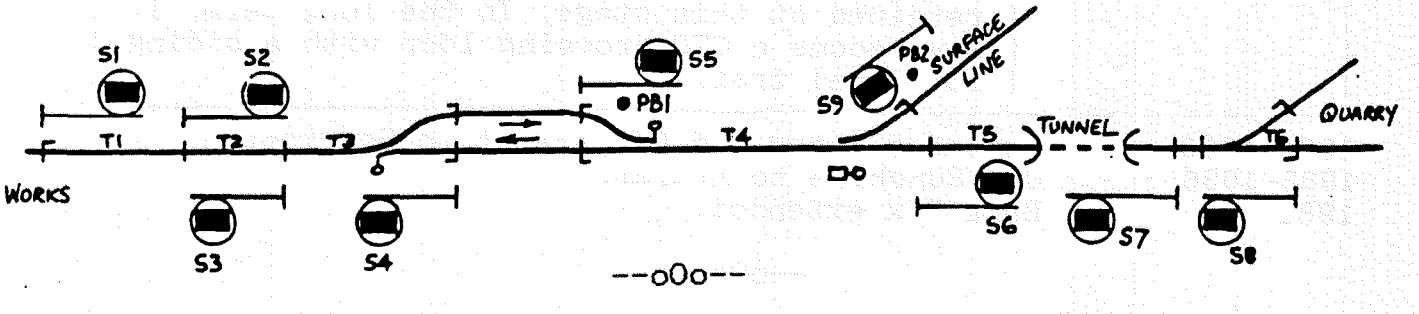
The main line between the Works and the Quarry was divided into two sections by a crossing loop. The points at each end of the loop were set for arriving trains to take the left hand road but departing trains could trail through the points so that manual operation was unnecessary. Point indicators were provided; each showed a Green light when the points were set for the left hand road and a Purple light when set for the right hand road. The line was track circuited and all signals normally showed green. The signals were Style R light signals and S1, S4, S5 and S8 could show red, yellow or green, whilst signals S2, S3, S6, S7 and S9 could show only red or green.

Each signal was controlled by two track sections ahead, thus S1 would show Red when a train was in T1 or T2 and subsequently yellow when T3 was occupied after T1 and T2 were clear. There was, however, no direction discrimination in this system and so the yellow light had to mean Stop, just as much as the Red and it was provided for information purposes only. The function of the intermediate signals S2 and S3 was not therefore to space following trains but rather to keep opposing trains apart, should they pass S1 and S4 simultaneously. Loaded trains had right of way and so in this event the loaded train would wait at S3 while the other set back to the works.

The points leading to the surface line were motor operated and controlled by push buttons PB1 and PB2. A train going to or from the line had to pass S5 or S9 (at Green) and stop in T4 with the engine opposite the push buttons. The button was pressed and the points would reverse, a white indicating light above the button showing that they had responded correctly. The train could then proceed and when clear of T4 at either end, the points would automatically restore to normal. (These are now, of course, hand operated but the point machine was still in place a few months ago, as were the push buttons.)

In the event of a signal failure on the Works section, a train was allowed to proceed with extreme caution after waiting for five minutes; on the quarry section, however, a train could only proceed on instructions from the Responsible Officer (the Quarry Foreman or his deputy).

The signals were provided with protective shields (worked from the ground by a special rod) with one engine crew to open the shields on Monday morning and another crew to close them on Friday afternoon.



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