

Signalling Record Society (Victoria) - SOMERSAULT.
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Deadline for September issue is 21 August 1988.
NEXT MEETING: Friday, 16 September 1988.
VENUE: A.R.H.S. Library Room, Windsor Rly Station.

MINUTES OF JULY 1988 MEETING

HELD AT: A.R.H.S. Library Room, Windsor Railway Station.

HELD ON: Friday, 15 July 1988.

MEETING COMMENCED: at 2010 hours.

PRESENT: Jack McLean, Wilfrid Brook, Jim Brough, Jon Churchward,
Glenn Cumming, Graeme Inglis, Tony Kociuba, Keith Lambert,
Colin Rutledge, John Sinnatt, Bob Whitehead, and visitors
Andrew McLean and K. McQueen.

ITEMS: 1. Train Orders - a map showing proposed Victoria train
order routes was tabled. The routes are:-
 Sunolly-Mildura
 South Geelong-Warrnambool
 Gheringhap-Maroonah
 Ararat-Portland
 North Bendigo-Swan Hill
 Traralgon-Bairnsdale
 Dandenong-Barry Beach

2. Dennington - although operated under siding conditions,
a Master Key is still carried to open the staff locked
points.

3. Hamilton - is now a staff locked siding.

4. Swan Hill - a new miniature Annett Key has been
installed in the past week.

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MURTOA & DIMBOOLA: The question of why there are two working arms on the automatic (permissive?-Ed) at Murtoa but not at Dimboola was discussed and solved courtesy of A.Jungwirth & Colin Rutledge.

SYLLABUS ITEM: An interesting video of the Somerset & Dorset Railway in the early '60s plus the development of BR's class 91 electric loco was presented.

MEETING CLOSED: at 2200 hours.

NEXT MEETING: Friday, 16 September 1988.

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SIGNALLING ARRANGEMENTS

- X 17.6.1988 SANDRINGHAM. No 5 road was abolished. No 15 catch points were replaced by a derail and wheel crowder. Dwarf signal, SHM 918, was converted to a light signal. (D 2307/88)
- X 19.6.1988 KEON PARK-LALOR. New signalling diagram No 23'88 (Ruthven-Epping) became effective and diagram No 15'88 is cancelled. The principle alterations are as follows:-
1. The Train Staff and Ticket sections Keon Park-Thomastown and Thomastown-Lalor, and the long section Keon Park-Lalor, were abolished.
 2. The single line section between Keon Park and Lalor is now worked under the rules for Automatic and Track Control.
 3. The Pilot Staffs are located alongside the respective signal control panels.
 4. At Keon Park, signal KPK 104, was converted to a three position home signal which will display normal speed aspects only. Up Repeating signal T554 was converted to a three position automatic signal.
 5. At Thomastown, the up semaphore home signal, the down (light) home signal and automatic signals TS580 and TS599, and signal quadrants were abolished. The siding was taken out of service, the points were secured normal and locked with an BP lock, and will be removed later.
 6. At Lalor, Up Home signal post 1 and down automatic signal TS599 were abolished. A new post 1, Three position Up Home signal has been provided nearer Lalor station protecting the single line section.
 7. Automatic signals T551, T567, T576, T581, T596, T597 and T615 were commissioned. Signals T576 and T581 at Thomastown are interlocked with the boom barriers in advance and are controlled via SP key operated switches. These signals may be restored to stop in the event of a train remaining at the platform longer than necessary.
- NOTE: The diagram incorrectly shows T614 as an automatic signal when in fact it is a three position up home departure signal.
8. Pedestrian boom barriers were installed at Settlement Road, Heyington Grove and Mann's Road level crossings. Pedestrian gates were provided at Messmate Street and Derrick Street pedestrian crossings. (D 2305/88)

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- X 21.6.1988 COLAC. The disc signal from the loco road to the main line and the associated "A" pattern annett locks and quadrants were abolished. (D 497/88)
- 22.6.1988 WALLAN. Siding "B" was abolished. Points No 20 and disc signal No 19 were abolished. Levers Nos 19 and 20 were sleeved normal. (D 479/88)
- X 27.6.1988 HAMILTON was disestablished as an electric staff station, the existing Automatic Electric Staff sections "Grampians Loop-Hamilton" and "Hamilton-Miakite Loop" were abolished and replaced inlieu with a Train Staff and Ticket section "Grampians Loop-Miakite Loop". At Hamilton all signals were abolished, the plunger locks were abolished and replaced by Large Pattern Staff Locks and small point levers. The Annett Locked crossover at the down end was spiked normal and hinged derails were provided at each end of No 2 road. A notice board applying to down trains lettered "Maximum Speed to Crossing 35km/h" was erected adjacent to the down home departure signal, post 3, 245 metres in the rear of the Tyres Street PCR. (D 506/88)
- X 28.6.1988 BROOKLYN. Boom barriers were added to the flashing lights at Francis Street level crossing (14.250km). (D 480/88)
- X 29.6.1988 FRANKSTON. New signalling diagram No 25'88 (Aspendale-Frankston) became effective and diagram No 45'87 is cancelled. The alterations are as follows:-
 1. The down end connections between the main line and the yard were restored to service. The straight road is now via No 3 road to the single line.
 2. Points Nos 15 and 25 were brought into service. Pilot levers Nos 14 and 17 were converted to plunger levers, and levers Nos 16 and 21 were converted to pilot levers and will be removed at a later date.
 3. The right hand disc on post 12, the arm on post 13, the disc on post 15 and the right hand arm and disc on post 19 were restored to service. All signals at the down end were electrically lit. (D 2329/88)
- X 30.6.1988 MARYBOROUGH. New signalling diagram No 10'88 became effective and diaram No 10'69 is cancelled. In connection with the extension of Nos 1 and 2 roads and the relocation of the junction of the Mildura and Castlemaine lines, and also to the former loco depot out to the point of divergence, the following alterations to the signalling were brought into service:-
 1. Signals Nos 12, 14, 22 and 24, and crossovers Nos 17 and 19 at the down end were abolished. The auxiliary frame and the crossover worked therefrom were also abolished.
 2. Siding "C" and "A" Dock were abolished.
 3. New home signals Nos 12, 20, 24 and 26, dwarf signals Nos 14, 18 and 22, and points Nos 15, 17, 19 and 21 were brought into service.
 4. Location boards lettered "MARYBOROUGH" were provided 1000 metres on the down side of home signals Nos 24 (Castlemaine line) and 26 (Mildura line). (D 500/88)

X 5.7.1988 MURCHISON EAST. The main line plunger locked points leading to the former Rushworth line were abolished. Signal post No 1 (from the Rushworth line) and the right hand signal on Post 3 (to the Rushworth line) were abolished. Amend signalling diagram No 14/73 accordingly. (O 505/88)

WN 26/1988 GLENHUNTLY. Commencing forthwith the speed of goods trains over the Glenhuntly Road level crossing was increased from 15km/h to 30km/h, the same as for passenger trains. (O 511/88)

X WN 26/1988 LALOR - General Appendix Amendment.
Insert as a new instruction, left hand column, page 227.

Lalor

"The signalman at Lalor must not allow a train to proceed towards the Up Departure Home Signal, post 1, while there is a down train approaching in the single line section, Keon Park-Lalor. (O 507/88)

MORDIALLOC - General Appendix Amendment.
Insert as new instruction, right hand column, page 242.

Mordialloc

Failure of Home Signals

1. When Mordialloc signalbox is switched out, the post telephones on Home signals Nos MOR 700, MOR 704, MOR 709, MOR 711 and MOR 712, are switched through to Caulfield signalbox.
2. Signal Post No MOR 700.

(a) In the event of a train or locomotive arriving at Home Signal MOR 700 and the signal is at the stop position and the illuminated letter "A" is not displayed, the driver must immediately communicate with the signalman by telephone, identifying himself and his train.

(b) If the signalman has reason to believe that the signal has failed, he may authorise the driver to pass the signal at the stop position provided that the line is clear between signal post Nos MOR 700 and MOR 704. The signalman must give the driver his name for record purposes.

3. Signal Posts Nos MOR 704, MOR 709, MOR 711 and MOR 712.

(a) In the event of a train or locomotive arriving at any of the above Home signals and the signal is at stop and the illuminated letter "A" is not displayed, the driver must immediately communicate with the signalman by telephone, identifying himself and his train.

(b) If the signalman has reason to believe that the signal has failed, the following steps must be taken:-

(i) If the Mordialloc signalbox is switched in, the provisions of Regulation 95 must be complied with.

(ii) If Mordialloc signalbox is switched out, the signalman at Caulfield must instruct the driver to inspect the points protected by the signal, and if set correctly, may authorise the driver to pass the signal at the stop position.

(iii) Before authorising the driver to pass home signals MOR 704 or MOR 711, the signalman Caulfield must ascertain if the appropriate platform road is clear. The signalman must give the driver his name for record purposes.

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(c) In the circumstances described above, the driver must give the two bell code signal to the guard who must acknowledge it, or in the case of a locomotive hauled train, or rail motor, inform the guard (if one be employed on the train) via the train radio. The driver may then proceed as prescribed in Regulation 74.

4. Should a train be worked by a driver and secondman, the secondman must carry out the duties prescribed for the driver.

5.7.1988 CAULFIELD-MOORABBIN. Hoods were fitted to all co-acting signals.

× 6.7.1988 WALLAN. Switching out facilities were commissioned. (O 553/88)

× 6.7.1988 RUTHERGLEN-WAHGUNYAH. The Train Staff was abolished and this section of line is now worked under siding conditions. (O 554/88)

× 7.7.1988 NAGAMBIE-MURCHISON EAST. The large pattern electric staff instruments were replaced by miniature type instruments. A staff balancing magazine was also provided. Two miniature compo staffs were provided. (O 567/88)

× 8.7.1988 GREENSBOROUGH. The down starting signal, post 11, was abolished. Lever No 20 was sleeved normal. (O 2346/88)

× 8.7.1988 DANDENONG-LANG LANG. The instructions for converting the electric staff sections into one section of Staff and Ticket were amended. No 8408 now operates on Saturday morning under the authority of a Line Clear Report. The following table shows the operation of the trains concerned.

Days	Train	Staff or Ticket
FRIDAYS	9491 Down Sand Gds	Ticket
	9490 Down Gds	Staff
	9290 Up Gds	Staff
SATURDAYS	8408 Up Pass	Line Clear Report
	8409 Down Pass	Staff
	9484 Up Sand Gds	Ticket
	8434 Up Pass	Staff
	9487 Down Sand Gds	Ticket
SUNDAYS	8433 Down Pass	Staff
	9486 Up Sand Gds	Ticket
	8488 Up Pass	Staff
	9489 Down Sand Gds	Ticket
	8493 Down Pass	Ticket

This supersedes circular O 75/88. (O 558/88)

10.7.1988 DIMBOOLA AND MILDURA PASSENGER TRAINS. Passenger trains on the above lines will operate without a traditional passenger guard. All empty trains. (O 531/88)

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- X 10.7.1988 GLEN IRIS. High Street level crossing was moved 10 metres in the up direction. (O 2355/88)
- X 13.7.1988 HAMILTON. Healthy state lights were provided at South Boundary Road level crossing flashing lights. Yellow whistle posts were also provided to indicate that the crossing is so equipped. (O 545/88)
- X 13.7.1988 SWAN HILL. The staff locks on the BP, Caltex and GEB sidings were abolished and replaced with annett locks. Signal F was relocated to the down side of the Murray Valley Highway. The GEB and Caltex siding annett locks are "E" pattern and the BP Siding annett lock is F pattern. An E to F pattern key exchanger is provided near BP Siding. The E pattern key is located in a circuit controller in the SMS office and the removal of the key holds signals F and G at Stop. (O 565/88)
- X 14.7.1988 DIMBOOLA. Healthy state lights were provided at Ellerman Street level crossing flashing lights. (O 546/88)
- X 15.7.1988 WEDDERBURN JUNCTION was closed to all traffic and the points and signals were removed. The interlocking frame was also removed. (O 572/88)
- 24.7.1988 SWAN HILL. Swan Hill line passenger trains will be operated by a Conductor inlieu of the traditional Passenger Guard. (O 561/88)
- 24.7.1988 BALLARAT. The following trains will be worked by a Conductor inlieu of the traditional Passenger Guard:-
1215 down Monday-Friday 0745 up Monday-Saturday
1230 down Saturday 1445 up Saturday
1615 down Sunday-Friday 1850 up Monday-Friday
1815 down Saturday
2005 down Monday-Friday
This completes the implementation of the Ballarat services.
(refer O 294/88) (O 578/88)
- 24.7.1988 GEELONG. The following trains will be worked by a Conductor inlieu of the traditional Passenger Guard:-
- | | | |
|-----------------------------|---------------------------|--|
| 1100 down Geelong M-F | 0640 up Geelong M-F | |
| 1440 down South Geelong M-F | 0645 up South Geelong M-F | |
| 1810 down South Geelong M-F | 0655 up South Geelong M-F | |
| 2330 down Geelong M-F | 1030 up South Geelong M-F | |
| | 1230 up Geelong M-F | |
| | 1610 up South Geelong M-F | |
| | | |
| 0900 down Geelong Sat | 0730 up Geelong Sat | |
| 1200 down Geelong Sat | 1130 up Geelong Sat | |
| 1300 down Geelong Sat | 1330 up Geelong Sat | |
| 1500 down Geelong Sat | | |
| 2330 down Geelong Sat | | |
| | | |
| 2130 down Geelong Sun | | |
- (O 578/88)

(continued on page 97.)

LEVEL CROSSING PROTECTION

by John Sinnatt

In these Notes the methods of protection used at level crossings in Victoria are described - Hand Gates, Interlocked Gates, Warning Bells, Wig-Wags, Flashing Lights, Boom Barriers - together with the associated signalling arrangements.

1. HAND-OPERATED GATES

1.1 HISTORICAL

Level crossings on the Victorian Railways were generally at first protected by hand-operated gates in accordance with British practice. Gates at a station could be worked by the traffic staff but those at an intermediate crossing required the services of a Gatekeeper, who lived in a cottage beside the line. He was to leave the gates normally open for trains, and to close them across the line only when necessary to let a road user through. Gates could however be declared "privileged", which meant that they could be closed and locked across the line between the passage of the last train at night and the first next day. Signals were not at first provided.

The economic depression of the 1890s led to a drastic change, and saw the beginning of the once-familiar unprotected open crossing. In the three years from mid-1892 the gates and gatehouses were removed from no fewer than 989 crossings, and cattle guards installed instead (Annual Report 1894/95); the gatehouses were generally re-erected at stations for use as Departmental residences. But gates were kept in the inner suburban area and at some country stations, particularly in the larger towns or on double-tracked lines. Most crossings which had hand gates in later years would probably have had them from the beginning, but some open crossings in the Cheltenham - Mentone area did have hand gates fitted around 1924. Bondi Road, a new crossing at the new Bonbeach station in 1926, would have been one of the last to gain long-term hand gates.

The first intermediate hand-gated crossings to be provided with signals were Pascoe Vale Road (Down and Up Homes by 1903) and Murray Road, now Devon Road (Up Home by 1908), both between Essendon and Broadmeadows. By 1919 only three further crossings in the suburban area had gained signals, Park Street (Moonee Ponds), Neerim Road, and New Street, but nine crossings in the country had been equipped, including four between Bendigo and Eaglehawk. Signal protection might be provided for one direction only. The three-position signals at Park Street, and at about 19 other crossings in later years, were controlled by miniature levers. Signals at hand gates were generally not interlocked, and had to be kept normally at Proceed.

During the 1920s, about 14 crossings received signal controls, including four between Westgarth and Heidelberg and two each on the Dandenong and Frankston lines, but it was only after the Fawkner (1940) and Whittlesea (1941) lines had been treated that nearly all hand-gated crossings in the suburban area had full signal protection. The last crossing treated appears to be Devon Road, which was given only an Up Home initially, and did not gain a Down Home until around the time that Oak Park station was established in 1956. Pedestrian wicket gates, locked by Gatekeepers' levers, were also provided from the 1920s. A new type of tubular-steel gate, opened and closed by the lever, was introduced in the 1950s; an early installation was the one at Poath Road, Hughesdale (1956).

A late development was the provision in 1979 of flashing (rotating) red lights, switched on by the Gatekeeper, at Maroondah Highway, Lilydale, and Brunswick Road, Jewell; these had been introduced earlier at interlocked gates.

Up till the 1930s, even where signal protection was provided for both directions, hand gates were still to be kept normally open for trains during periods of traffic, with the signals set at Proceed. (At some crossings two gates were noticed kept across the road and two across the track.) However, in the 1936 General Appendix, 47 crossings were named where the hand-worked gates were allowed to be kept normally across the track. Of these, 44 were in the country, mostly near stations or in the larger cities (Geelong, Bendigo), one on a Goods Line, and only two in the electrified suburban area (Bowen Crescent and High Street, Reservoir). In mid-1938, a supplementary list of 14 crossings in the suburban area appeared in the Weekly Notice; all had full signal protection. Most suburban crossings were notified by 1941, but Wickham Road, for example, was not listed until 1949, after gaining control of Highett's Up Starting.

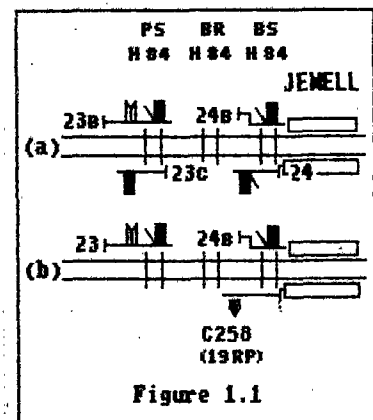
Permission was apparently never given for the hand gates at certain crossings to be kept normally across the track. Some probably had poor visibility, e.g. Linacre Road, Heatherdale Road, while others had no signal controls, e.g. Latrobe Street, Springvale Road.

A start was made as early as 1879, at Newport, to replace hand gates at inner suburban stations and the more important country centres with gates worked mechanically from a signal box ("interlocked gates"). These eventually superseded the hand gates at over 80 crossings in the suburban area, the last being at Batman in 1935 (18 Apr), but over 60 still then remained. These crossings are listed in Table 1.1 (page 91), together with later changes. Large-scale replacement started with the introduction of boom barriers in 1956 (6 Feb), and by 1967 a total of 25 sets had been replaced by booms. Replacement of interlocked gates was then emphasised, such that 15 crossings in the suburban area still had hand gates by early 1988. Gates at some country crossings have been replaced by Flashing Lights, including the ones between Bendigo and Eaglehawk.

1.2 SIGNALLING ARRANGEMENTS

Where crossings are close together, particularly if also close to a station, the arrangements can be sufficiently interesting to warrant further description. Figure 1.1 shows three hand-gated crossings at the Up end of Jewell station: Park Street (PS), Brunswick Road (BR), and Barkly Street (BS). They are assumed to date from opening of the line in 1884. Referring to (a), before 1924 there were no Gatekeepers' controls and only two posts in the area carried signals. Post 23, off the diagram to the left, carried both the Up Distant for Royal Park and also, on the wrong side of the line, the Down Distant for South Brunswick (the former name of Jewell, changed in early 1954). Post 24 carried both the station's Up Starting and its Down Home, again on the wrong side of the line.

In 1924, Post 23B was established to carry a new Gatekeepers' Down Home, controlled by both PS and BR, and the Down Distant, transferred from Post 23. In 1940, all the additional signals shown in (a) were provided. New Post 23C was controlled by PS only. New Post 24B carried the Down Home formerly on Post 24, and the arms on both Posts were now controlled by BS, as was the arm on Post 24 by BR; three levers were now required to operate this signal. Both the Down and Up Distant arms were now fixed at Danger, presumably because of the difficulty of ensuring, mechanically, that all the signals ahead were off.

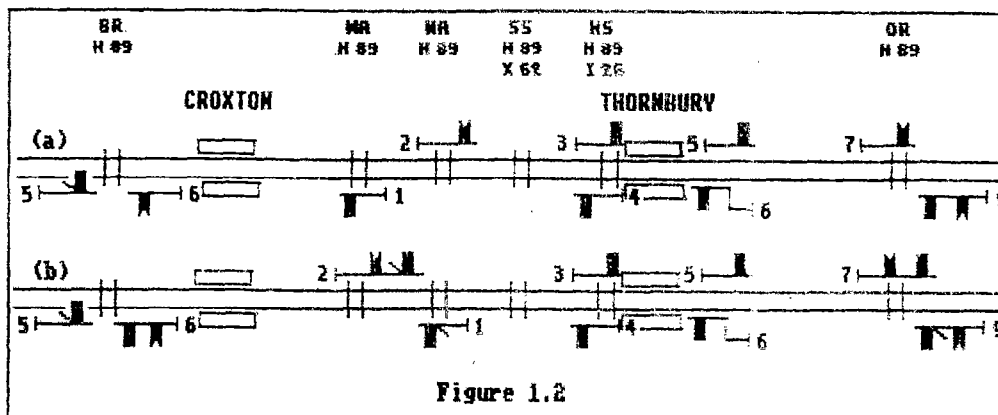


The next move occurred in 1971 when three-position signalling replaced the Block Telegraph system between Royal Park and Jewell. On the Down line, the section terminated at the Gatekeepers' Home signal above the Distant. The Home was fitted with a reverser, as usual for a terminating signal; the overlap track circuit extended past Post 24B to the signal at the Down end of the platform. On the Up line, Automatic C258 replaced the signals on Post 23 (the Royal Park Distant, thus enabling Post 23B to be renumbered), Post 23C, and Post 24.

In addition to control by track circuit, signal C258 had to be controlled by a lever (19) at Royal Park because of the junction there, and also by all three Gatekeepers, although not now by Jewell itself. Four levers would thus have to be operated for C258 to clear, and so it would be the most controlled signal on the Victorian Railways. Readers from other States or countries may therefore wonder why it would be classified as an Automatic. In Victoria, this means simply that it should be safe for a Driver to pass such a signal at Stop on his own initiative, and proceed in accordance with the Regulations, without having to obtain special authority from a Signaller or Train Controller.

The alterations carried out in 1940 were part of a scheme to provide full signal protection at ten hand-gated crossings on the then Fawkner line; the gates could then be kept normally across the track. The only Distant left working was the Up at Moreland. The crossing at Bell Street has since gained boom barriers, but the other nine still had hand gates as at early 1988.

In 1941, a similar scheme was carried out at eight crossings on the then Whittlesea line between North Fitzroy and Regent. Four of these, between Northcote and Bell, are shown in Figure 1.2: Beavers Road (BR), Woolton Avenue (WA), Normanby Avenue (NA), and Oakover Road (OR). Smith Street (SS) did not receive signal controls, and was closed in 1962. Hutton Street (HS) had already gained interlocked gates, worked from Thornbury box (1926). Siding connections are omitted. The pre-1941 signals are shown in (a); Croxton was not a Block Post, but controlled Northcote's Down Starting (Post 5), and had its own Up Home (Post 1). BR also had gained control over the arm on Post 5 around 1926.



The alterations to provide full signal protection are shown in (b): a Home arm was added to Post 6, worked only by BR; Posts 1 and 2 were both moved back and a Home arm added to 2, the two Home arms now being controlled by both WA and NA; a Home arm was added to Post 7, worked only by OR, who now also controlled Bell's Up Starting on Post 9. The Distant were all still workable, but the top arm had of course also to be off. Thus three levers had to be operated for the Distant arms on Posts 2 and 9 to clear as well as three levers for the arms on Posts 5 and 1. For these latter posts, four balance levers were required, and for Post 2, five such levers. Three-position signalling was installed late in 1987, so the Gatekeepers then controlled Automatic signals.

The different workability of the Distant signals on the two lines may be explained by the fact that timetables for 1938 and 1945 both show the evening Down Whittlesea Rail Motor running non-stop from Northcote to Reservoir, and the return Up running non-stop from Reservoir to North Fitzroy, whereas on the Fawkner line, all passenger trains stopped at all stations. Working Distant could have been helpful to the Whittleseas, but fixed Distant might not have mattered much to the Fawkners.

But then again they might have. Some time in the late 1950s suburban train Drivers decided to obey to the letter Regulation 49(d) which then prescribed that, on finding a Distant at Danger, a Driver should reduce speed and be prepared to stop at the signal if necessary, but if the line ahead was seen to be clear, he could proceed cautiously to the Home signal. The many fixed Distant on the Fawkner line, and there were even more after the duplication beyond Coburg in 1959, must have led to considerable late running. But the authorities soon recognised that the Regulation was an anachronism - a carryover from the days of Time Interval working - and brought it suitably up to date; the normal position of the arm was also re-defined as Caution rather than Danger.

As mentioned earlier, Northcote's Down Starting and Bell's Up Starting were controlled by Gatekeepers; their Distant however were not. After Bell gained boom barriers in 1969 and the box could switch out, it was often possible to note the Up Distant, near Preston station, actually at Proceed while the Up Starting on Post 9 was at Stop due to the control by the Oakover Road Gatekeeper. This suggests that the view, long held by the writer and perhaps by some readers, that a clear Distant meant that all signals ahead worked by that box were also necessarily clear, was wrong. Apparently it could mean no more than that all the appropriate signal levers in the box were pulled over, and that if one of the signals was controlled by a Gatekeeper it could still be at Stop.

Some exceptions occurred to the general practice that signals at hand-gated crossings are not interlocked. At Ascot Vale Road on the Flemington Race course line the gates are fitted with circuit controllers, and two-position Home (Light) signals 2 and 6 electrically detect that the gates are open for trains. At the temporary tramway crossing at Glenhuntly Road, Elsternwick, established during the grade separation project in 1959-60, the gates were similarly fitted, and were detected open for trains by a lock on the power-switching lever. We may then reasonably infer that the gates at the former road and tramway crossing at Epsom Road on the Racecourse line had also been similarly fitted.

At Frankston (1939), Lilydale (1945), and Cressy (1951), an Annett key or Annett/crosslock arrangement was used to prove that the hand gates at a foot crossing over the back platform road were open for trains; an arrangement was also provided at Kaniva (1966). At Lilydale, when each of the two gates was placed across the footway, an Annett key secured by a chain to the gate could be turned in a lock on the gatepost. This action enabled a crosslock lever in the box to be restored, thereby releasing the signal levers. When the station was de-interlocked in 1965 the crosslock lever was replaced by a new catch-handled and Annett-locked lever near the crossing, rodde to the locks on the gateposts. While the gates were across the track this lever was at reverse and the key locked in. When the gates were placed across the footway and the chained keys turned, the lever could be put to normal and its loose key removed; this key could then be used to unlock the required signal quadrant lever. The arrangement was superseded by pedestrian boom barriers and three-position signals in 1985.

Note on Table 1.1 (next page): Of the 66 crossings listed, 32 were replaced by booms, 3 were grade separated (plus two that first had booms), 9 were closed, 7 were on lines that closed, and 15 still existed at 1 January 1988).

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TABLE 1.1: HAND-OPERATED GATES AT 1936 (SUBURBAN) (1 January 1988)

	A	B		A	B
Giffard Street	WBch - Will	B61	Pros Hill Rd	Riv'dale (U)	B59
Melbourne Rd	Newp - Broo	G75	Mont Albert Rd	Mont Alb (U)	B63
Ascot Vale Rd	Newm - Show		Elgar Road	MA1b - BoxH	B57, G71
Park Street	MoonP - Ess	B59	Mid'borough Rd	Laburnum (U)	B58
Pascoe Vale Rd	Str'more (D)	G63	Blackburn Road	Bla'burn (D)	B70
Devon Road	PasV - OakP	B62	Springvale Rd	N'wading (U)	B56
Glenroy Road	Glenroy (U)	B57	Heatherdale Rd	Hea'dale (D)	B58
Camp Road	Bro'dows (U)	B61, G78	Madden Grove	Burn - Hey	B63
Park Street	Jewell (U)		Avenel Road	Kooy - Toor	X
Brunswick Road	"		Elizabeth St	"	X55
Barkly Street	"		Toorak Road	"	B56
Dawson Street	Jew - Bruns		York Road	Gard - GlenI	X55
Phoenix Street	"	X	Moirs Street	Darling (U)	B63
Albert Street	B'wick (U)		Grange Road	Caul - Carn	B64
Hope Street	Anstey (U)		Poath Road	Hu'dale (U)	B72
Tinning Street	Anst - More		Neerim Road	Caul - Glen	B87
Reynard Road	More - Cob		South Road	Moor'bin (U)	G58
Bell Street	Coburg (D)	B62	Wickham Road	Moor - High	B80
O'Hea Street	Cob - Bat		Park Road	Chel'ham (U)	B66
Bowen Crescent	RoyP - NCar	O65, C81	Latrobe St	Chel - Ment	B65
Park Street	NFit - Fitz	O65, C81	Patty Street	"	X
St Geo's Road	"	"	McDonald St	M'alloc (U)	B87
Scotchmer St	"	"	Bondi Road	Bonbeach (D)	B77
Alfred, Cres	"	"	William St	NorB - MidB	X59
Bennett Street	NFit - Rush	C65	Kinane Street	MidB - BBch	X
Hawthorn Road	Nor'cote (U)	X	New Street	BBch - Hamp	
Beavers Road	Nort - Crox		Linacre Road	Hamp - Sand	B56
Wooltan Avenue	Crox - Thor		Swallow St	Gra - PPier	C87
Normanby Ave	"				
Smith Street	"	X62			
Oakover Road	Thor - Bell				
Cramer Street	Preston (U)	B67			
Murray Road	(D)	B67			
Regent Street	Regent (U)	B67			
Powell Street	(D)	X			
High Street	Res'voir (D)	B63			
Victoria Road	Dennis (D)	B64			
Grange Road	Fair - Alph	B64			

Column Headings:

A: Section or Station

B: Later Changes and Years

Column B Codes:

B: Boom Barriers

O: Open Crossing

C: Line Closed

X: Xng Closed

G: Grade Separation

For Summary of Column B see Note at foot of previous page.

(End of Part 1)

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MORE CROSSING LOOP CLOSURES IN NEW SOUTH WALES AND OTHER ALTERATIONS

(Reprinted from New South Wales Digest and compiled by Ken Date)

GAMBOOLA, located on the main western line, met its demise on 26 March 1987. Gamboola was opened on 8 May 1925 in conjunction with the opening around that time of the Dubbo-Molong route, which would have generated additional traffic between Molong and Orange. It was constructed on the "Down and Up" arrangement and, unlike a number of other loops that were originally constructed that way, it was never subsequently converted to the more conventional "Main and Loop" pattern. In fact, if anything can be said about Gamboola, it is that it remained virtually unaltered from the day it opened until the day it closed.

With the closure, what was the Down line has become the main line and the former Up line will be removed. The new section is Molong-Borenore, with a length of 21.867km. Type 'B' miniature electric staff instruments are used with the staffs being numbered 1 - 100.

Another western closure occurred on 8 April 1987 when MULLION CREEK, between Orange and Stuart Town, was closed. Mullion Creek opened on 1 June 1880 although it was not interlocked until 17 June 1927. The circular that advised of the interlocking arrangements, Circular 390 of 1927, contains one of those wonderfully ambiguous instructions of which railway managements seem to have always been so fond. Under the heading "General Instructions" it read "Owing to the steep grades, drivers and guards must exercise care when approaching Mullion Creek". (This conjures up all sorts of interesting possibilities; for instance, is it only stations on steep grades that must be approached 'with care'? Could drivers handle the train in any manner that they saw fit providing that they remembered that Mullion Creek required care to be exercised?)

In addition to the removal of the signals and associated equipment, Frames C & F were dispensed with, whilst points 2C and 2F were straight railed.

The intermediate staff instruments for the Rogers Meat Company sidings and the Canobolas Wool Topmaking Siding at Orange were removed and the points will now be unlocked by the new staff for the section or by the key from the Pilotman's lock in Orange signal box.

The new section is Orange to Stuart Town, a distance of 57.231km. Type 'C' instruments are used with staffs numbered 1 - 50.

GRONG GRONG, on the Junee-Narrandera line, ceased to exist as a staff station and crossing loop on 26 March 1987. The new section is Narrandera to Ganmain 45.122km in length, with type 'A' instruments and there are 36 staffs numbered 1 - 36. The loop line will be removed, leaving only the Goods Siding. Frames B and D are now unlocked by the key on the miniature electric staff for the new section. This key also unlocks Frames B and F at Matong, Frames A, C and D at Narrandera Stock Siding and Frame J at Narrandera.

Grong Grong had an unusual claim to safeworking fame; it was the only station at the end of a section where bank engine working took place, which was permitted to be unattended while such working was in operation. The electric staff regulations require that signal boxes at both ends of the section must be manned while bank engine working is in progress. The only exception was Narrandera-Grong Grong, whereby Grong Grong was allowed to be unattended for bank engine working, on the authority of the Train Controller at Junee.

An important alteration occurred at QUEANBEYAN yard on 8 April 1987 when No 11F points were altered to lie for the Canberra line. The Canberra line has become the main line whilst the former main line to Cooma is now the branch line. A number of associated signalling alterations were carried out, including the abolition of Frame H, renumbering of the levers and functions of Frames A and F, the provision of electric locks in lieu of facing point lock bars on some of the points and an increase in standing room in the loop of approximately 55 metres.

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While on the subject of junctions, the triangle at ROTO has been removed, the effective date being 17 March 1987. When the Roto-Hillston line was placed out of use last year, a stop block was placed across the branch line about 100m south of the apex of the triangle. At the same time, Roto was closed as a staff and crossing station, although, at the time, it seemed that the junction would be left in place.

At HILLSTON, the Up Home and Landmark signals were removed, and a stop block placed across the line at 748.050km on the Sydney side of Milton Street level crossing on 13 January 1987. The Ordinary Train Staff and Ticket section Hillston-Roto has been cancelled.

As reported in the March Digest, a recent closure was the line between Gap and Werris Creek South signal box. This alteration came into force over the weekend of 31 January and 1 February 1987. At the same time, CARCONA, on the Binnaway line, was closed as a crossing loop.

In summary, all trains between Gap and Werris Creek now run via the North West line. An intermediate electric staff instrument for the section Werris Creek-Burilda is provided at Gap, as is an instrument for the new miniature ETS section Gap-Springridge (Type B, Nos 1-36). Trains proceeding between Werris Creek and Burilda have no need to stop at Gap.

To avoid confusion, the direction of travel over the Binnaway line was renamed, train from Werris Creek to Binnaway via Gap are now Down trains. A new interlocking machine, a six lever ground frame known as Frame A, was brought into use at Gap, as were new signals on the Binnaway and Narrabri lines. The hut housing the staff instruments is located adjacent to Frame A. (See diagram.)

Details of Frame A are as follows:-

Lever	Function
1	FPL for No 2 points.
2	Junction points
3	Up Home signal, Binnaway line.
4	Down Home signal, Narrabri line.
5	Up Home signal, Narrabri line.
6	Closing Lever.

As an example of the new operating procedures that were introduced with the alteration, consider the following:-

For trains travelling in the up direction from Binnaway line when Gap is unattended:-

- (a) The driver must bring his train to a stand at No 3 Up Home signal.
- (b) The Guard/Observer must confer with Control and then obtain the electric train staff for the section Werris Creek-Burilda from the intermediate staff instrument, unlock No 6 lever in Frame A.
- (c) Put back Nos 6, 5 and 4 levers.
- (d) Pull over Nos 1 and 2 levers.
- (e) Pull over Nos 4, 5 and 6 levers and remove the electric train staff for the Werris Creek-Burilda section from No 6 lever.
- (f) Pull over No 3 Up Home signal lever.
- (g) Exchange the Werris Creek-Burilda section for the staff for the Gap-Springridge section.
- (h) When the rear of the train is clear of the junction points, put back Nos 3, 2 and 1 levers. It is important to observe that Nos 4 and 5 signals clear when No 1 lever is placed normal.
- (j) Place the staff for the section Gap-Springridge in the staff instrument and advise control accordingly.

If you can make any sense of all that you will have realised that each lever in the frame has been operated at least once, both staff instruments have

been manipulated and two conversations have been conducted with the train controller. Quite a lot of work to enable a train to pass through a simple junction!

TUMULLA was closed on 14 May 1987 after a life of 76 years and was one of the most visited, photographed and spectacular safeworking locations in the State, if not Australia.

Opened on 11 October 1911 and was situated on a 1 in 40 grade, dividing the section George's Plains-Wimbledon. Up and Down working was in use throughout its life and runaway sidings were located at the Sydney end of both lines.

At the time of opening, a signal box was located adjacent to the Up line with a small staff exchanging platform standing opposite the box, adjacent to the Down line. The original box burnt down in 1942 and a new box was provided on the Sydney side of the old one, being brought into use on 7 September 1942 and it is this structure which remained until closure. On that day, signal box and all signals were placed out of use, the Down line became the main line and the new section became George's Plains-Gresham (Wimbledon having been closed some years ago). Type B miniature electric staff instruments apply to the new section with staffs numbered 1 to 50.

Due to the steep grade, Tumulla was a continual source of operational worry. Guards were advised that, in the event of their train being brought to a stand at the Down Home signal, they were to be prepared to act promptly should part of their train break away. Circular 284-24 of 1942 notified that Down Mail or Passenger trains of greater than 180 tons if hauled by a 32 class locomotive, or 225 tons if hauled by a 35 or 36 class locomotive, was not to be brought to a stand at the Down Home signal due to the difficulty in restarting on the heavy grade.

Of course, it was exactly this 1 in 40 climb that made Tumulla so popular with enthusiasts. The spectacle of steam locomotives labouring uphill with a heavy westbound freight was the subject of thousands of photographs and tape recordings. The constant procession of visitors that continued to trek to Tumulla long after the arrival of the diesel attested to its enduring attraction.

By 1987, Tumulla had become an anachronism. The loop was able to hold only a "50 long" train and two locos and was quite inadequate for the freight trains that ply the western rails today. It belonged to an age of shorter trains and more frequent services - today's railway demands fewer and longer trains and longer safeworking sections (although by modern standards, the new section of just over 14 km hardly qualifies as a long one).

In recognition of the need for facilities that can cope with today's traffic, the crossing loop at GEORGE'S PLAINS is being extended. The extension is occurring at the western end of the loop and the new Up Distant signal at George's Plains will be located almost exactly opposite the site of Tumulla's former Down Distant signal.

Tumulla was one of the few remaining locations where bank engine working still (occasionally) took place. A bank engine key, to allow bankers to proceed to 260.01km, was provided. With the closure of Tumulla, this facility has been transferred to George's Plains.

The last few years have seen a gradual whittling away of safeworking facilities between Bathurst and Orange, and the closure of Tumulla leaves only three signal boxes (George's Plains, Gresham where a section of double line commences and Newbridge about midway along the double line stretch which ends at Murrabo) between the two cities. It doesn't take too much imagination to see George's Plains and Gresham converted to remotely controlled power interlockings while automatic signalling would make very short work of Newbridge.

The death of Tumulla as a crossing station will be mourned by more than those with an interest in safeworking. Tumulla was a location to which generations of rail lovers from far and wide have travelled to witness the dramatic presentation of a railway in action. Of course the sites will still be there, but without the ramshackle little signal box perched precariously at the top of the high embankment and those ancient semaphores regulating the passing parade, Tumulla will never be quite the same.

DOMBARTON. Two days after the demise of Tumulla, another significant closure took place on 16 May 1987, that of Dombarton on the Unanderra-Moss Vale line.

Opened on 12 May 1943, Dombarton was one of the many new crossing stations commissioned to cope with the demands of war time traffic. Legend has it that the place was originally to be called 'Dumbarton' after the town in Scotland, however, the Chief Signal and Telegraphs Engineer of the day, one Walter Barton, took exception to the title and decreed that "Dombarton" would apply instead.

Dombarton was not, by any means, your average country crossing station. Even in a State that has seen a number of interesting departures from traditional practice, the facilities at Dombarton were quite extraordinary. The nature of the terrain made a standard crossing loop an unacceptable proposition so an ingenious system of "zigzag" refuge sidings was devised.

There were three refuges: No 1 on the Moss Vale side of the signal box and Nos 2 & 3 on the Unanderra side. The connections passed beneath the main line. A train that was to be refuged would proceed straight into the facing siding (No 1 for Down trains, No 2 for Up trains). It would then reverse into the opposite siding (No 3 for Down trains, No 1 for Up trains). Direct access was then available to the main line when it was clear. The refuges were slightly graded opposite to the direction of the ruling grade thereby giving trains a slight advantage when restarting.

It was an imaginative solution to a difficult problem and made Dombarton one of the more unusual crossing "loops" in the country. With the closure, the section has reverted to Unanderra to Summit Tank, a distance of just under 20km. Type B miniature staff instruments are provided with staffs numbered 1 to 50.

Dombarton won't disappear entirely from view however. It will be the junction for the new line now under construction to Maldon and the line between Dombarton and Unanderra is in the process of being duplicated. In its new guise, Dombarton will be a power operated junction remotely controlled from Wollongong signal box. Other interlockings on both the Maldon and Moss Vale lines will be similarly controlled and the loops at Summit Tank and Robertson have already been converted to power operation in readiness for CTC.

NORTH COAST LOOP EXTENSIONS. The SRA is currently involved in a programme of making extensions to a number of crossing loops on the North Coast line. When CTC was introduced to the North Coast there was practically no rebuilding - the mechanical interlockings were simply converted to remote power operation with little or no change to existing layouts. Due to the limits imposed by mechanical equipment, the crossing loops were generally of the order of 400 to 500 metres long. The current project will see selected loops extended to a new minimum standard length of 765 metres. Those chosen have approximately equal running time between them, although some potential locations were rejected because of the existence of natural or man-made obstacles to their extension.

Extensions so far have been at:-

PATERSON - 15 March 1987 to 765 metres. DUNGOG - 12 April 1987 to 770 metres.

STROUD ROAD - 3 May 1987 to 766 metres. CRAVEN - 24 May 1987 to 950 metres.

The extensions have already enabled the amalgamation of a number of goods trains into longer single trains to take place between Taree and Broadmeadow.

GRAMPIANS LOOP - MIAKITE LOOP

Special Instructions for Train Staff and Ticket Working

The Train Staff and Ticket Rules contained in the Rules and Regulations and the supplementary instructions in the General Appendix in conjunction with amended Rule 4 for Automatic Electric Staff working as prescribed in Circular A 846/86 must be adhered to, insofar as they apply to the Train Staff and Ticket working for the section Grampians Loop-Miakite Loop, with the modification and additional instruction as indicated hereunder.

1. Secondman in charge conditions will apply for the safeworking duties of his train at Grampians Loop and Miakite Loop.
2. On arrival of a train at Grampians Loop or Miakite Loop, the secondman must communicate with the Train Controller. If the train is not required to cross another train, the Train Controller will instruct the secondman to obtain the Train Staff for the forward section and insert the rear section staff in the instrument. The secondman of the first train to arrive must communicate with the Train Controller who will instruct him regarding the crossing arrangements.

3. Train Staff Tickets and Line Clear Reports must not be issued for the section Grampians Loop-Miakite Loop.

4. When it is necessary for a follow on train movement to take place, the Train Controller must arrange through the Stationmasters, Hamilton or Portland for the Train Staff to be transferred to the opposite end of the section.

The qualified employee appointed for this duty must be in attendance at the crossing loop in advance (Grampians Loop or Miakite Loop) prior to the arrival of the first train. On arrival at the crossing loop, the qualified employee must contact the Train Controller and when instructed he may withdraw the electric staff for the forward section from the instrument and exchange same with the Train Staff from the driver of the first train. In addition, he must conduct a roll by inspection, and after the train has cleared the crossing loop, report that the train is complete with End of Train Marker on the last vehicle to the Train Controller.

After this has been done, the qualified employee must then proceed to the crossing loop in the rear with the Train Staff.

On arrival at the crossing loop in the rear the qualified employee must communicate with the Train Controller and inform him that the Train Staff has been returned.

It will not be necessary for the qualified employee to remain at the crossing loop for the following train unless instructed to do so by the Train Controller.

5. Fouling of the single line section or shunting beyond the outer facing points must not take place unless the driver is in possession of the Train Staff for the section or a competent employee with hand signals and detonators has been sent out to protect such movement.

6. The Stationmasters, Hamilton and Portland must, after receiving the daily train program confer, and ensure that a qualified employee is rostered to undertake the duties of transferring the Train Staff.
(D 506/88)

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SIGNALLING ALTERATIONS

(continued from page 86.)

- 25.7.1988 KYNETON. The loco hauled Kyneton local passenger trains will be operated by a Conductor inlieu of the traditional Passenger Guard. (O 561/88)
- X 27.7.1988 ELMORE. New signalling diagram No 4'88 (Epsom-Echuca) became effective and diagram No 15'83 was cancelled. The plunger locked connection Diggora West line was removed together with up home signal "D" and down home signal "H". [NOTE: The diagram shows the right hand light signal remaining, previously being the Echuca line signal, but in fact the left hand one was retained for better sighting by drivers.] (O 626/88)
- X 27.7.1988 CHILTERN. Healthy state lights were provided at Beechworth Road level crossing. (O 615/88)
- X 27.7.1988 LARA. Healthy state lights were provided at Lara Lakes Road level crossing. (O 603/88)
- X 27.7.1988 SHEPPARTON. Healthy state lights were provided at Ford Road level crossing. (O 604/88)
- X 28.7.1988 BENDIGO "D" BOX. The status of the Rangelea line was reduced to siding conditions and was renamed Siding "B". The up and down home signals, and the up distant, for the Rangelea line were abolished together with plunger 20. Existing disc 14 on post 31 was renumbered 8 and now applies to Siding "B", and a new disc 14 was provided on the right hand side of post 31 leading from the down line to the Workshops Siding. A new disc No 29 was provided on the right hand side of post 35 and applies from Siding "B" to the up line. Amend signalling diagram No 4'80. (O 616/88)
- X 28.7.1988 SULKY LOOP & CRESWICK. New signalling diagram No 12'88 (Sulky Loop-Talbot) became effective and diagram No 18'76 (Creswick-Talbot) was cancelled. Creswick station was closed as a staff station and all points and signals will be removed later. Sulky Loop located at 128km was opened as an electric staff crossing loop. The points are equipped with trailable mechanisms with normal lie for the right hand line. The electric staff sections North Ballarat Jcn - Creswick - Tourello Loop were abolished and replaced by staff sections North Ballarat Jcn - Sulky Loop - Tourello Loop. (O 627/88)
- X 9.8.1988 WARRAGUL. Galaghers Lane (98.547km) was renamed Colman Street and boom barriers were added to the flashing lights at the level crossing. A down automatic signal D3149 was provided on the upside of the crossing. (O 646/88)
- 13.8.1988 LOCAL TRAIN RADIOS (formerly End to End Radios). All radios will be issued to crews as they sign on rather than the radios live in the loco convertacom and only get replaced when they are defective.

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- × 25.7.1988 CARRUM. The down end main line points, switch lock and catch points leading to Siding "B" were abolished. A baulk was placed at the down end of Siding "B". Amend diagram No 25'88 accordingly. (O 2392/88)
- × WN 31/1988 MARYBOROUGH. The signals at the down end of Nos 2 and 3 roads are three position dwarf signals. When placed to proceed, these signals display a Low Speed Caution aspect. When a train departs from Maryborough, the aspect will only apply until the train has cleared the points protected by such signal whereupon the train may accelerate to normal speed. (O 637/88)
- × WN 31/1988 STRATHMERTON. The SEB will be in used for the following trains:-
 Mon-Fri: 8308, 8307, 8324 and 8327.
 Sat: 8308, 8307, 8324 and 8335.
 Sun: 8330 and 8345.
 NOTE: Strathmerton is to be manned for all trains proceeding to the Tocumwal line. (O 639/88)
- × 28.7.1988 CRESWICK. Healthy state lights were provided at the Victoria Street flashing lights. (O 628/88)
- WN 31/1988 SUBURBAN TRAINS. Instructions issued regarding the failure of headlights. (O 644/88)
 Instructions issued regarding the failure of the whistle. (O 645/88)
- × 7.8.1988 WARRAGUL-YARRAGON. New signalling diagrams Nos 14'88 (Yarragon-Maryvale) and 16'88 (Warragul) became effective and diagrams Nos 9'82 (Yarragon-Maryvale) and 44'86 (Warragul) were cancelled. The principle alterations were:-
 1. Three position signalling replaced the Double Line Block system between Warragul and Yarragon.
 2. Warragul "A" and "B" signal boxes were abolished and were replaced by a panel in the station office.
 3. All two position signals at Warragul were replaced by three position signals with the exception of Post 36 which is a two position (light) starting signal.
 4. The points leading from the loop siding to the down line are secured by an "E" pattern annett lock and the points leading from the goods yard at the up end are secured by an "F" pattern annett lock.
 5. At Yarragon a closing lever was provided in the interlocking frame and illuminated letter "A" lights were provided on home signals Nos 2, 8, 30 and 39. Up starting signal No 7 was abolished and replaced by automatic signal D3562. (O 641/88)
- × 7.8.1988 FRANKSTON. Pilot levers Nos 12, 16 and 21 were removed. (O 2405/88)
- × 11.8.1988 ELTHAM. Home signal post 13 was converted to a two position automatic signal. A letter "A" will be provided on the post. (O 2414/88)
- × 7.8.1988 MORELAND. Sidings "A", "B" and "C" were abolished. The up and down end crossovers were abolished. Disc signal post 36 and the left and right hand disc signals on post 35 were removed. Levers Nos 6, 7, 8, 9, 10, 11, 12, 14, 15 and 16 were sleeved normal and will be removed later. (O 2406/88)

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- WN 32/1988 MILDURA. Commencing forthwith, vehicles may stand in No 1 road without an engine attached. When vehicles are so stabled, signals "A" and "B" must be sleeved at stop, the vehicles must be properly secured and a red light displayed at each end at night. (O 683/88)
- WN 32/1988 MELBOURNE-COBHAM LINE. Commencing forthwith, a passenger guard on the Cobham line passenger trains will not be rostered and the trains will operate under the conditions as a two man freight train. (O 617/88)
- X 10.8.1988 CHELTENHAM. Two additional push buttons for controlling the operation of the Park Street boom barriers were added to the signal control panel. The buttons will be lettered "Park Road Boom Hold Down" and "Park Road Boom Hold Down Cancel". The operation of the Boom Hold Down button will prevent immediate raising of the Park Road Boom Barriers after the passage of an up train and it is necessary for a down train to terminate. The Cancel button must be used if the down train does not terminate. (O 2411/88)
- 14.8.1988 MELBOURNE-WOLSELEY. The Overland between the above stations will not have a passenger guard but will be operated by a conductor only. (O 673/88)
- 15.8.1988 SEYMOUR LINE. All Seymour local passenger trains are now worked by a Conductor only, the passenger guard position has been abolished. The services that are operated by a railmotor and/or trailer will still, however, have a guard rostered. If these services are replaced by a passenger train, then that passenger train will not have a guard. (O 687/88)
- X 15.8.1988 DUYEN. The Hayes derail at the down end of No 6 road was relocated to the fouling point of the down end extension of No 6 road. (O 685/88)
- DUYEN - General Appendix
New instructions issued regarding the securing of points leading to No 6 road by hand locking bars and 4D padlocks. The hand locking bars are to be locked during the time that the Freight Centre is open but, provided the shunter and employee in charge agree, they may be unlocked to permit shunting operations to take place. (O 684/88)
- X 17.8.1988 WINDERMERE. The necessary alterations were carried out at the flashing lights to enable the signals and interlocking frame to be abolished. The station was closed as a staff station on 18.12.1988. (O 703/88)
- X 17.8.1988 WANGARATTA. The up distant signal, post 25, lever 74, was converted to motor operation. Amend diagram No 6'87. (O 686/88)
- X 17.8.1988 WALLAN-HEATHCOTE JUNCTION. Boom barriers were added to the flashing lights at Magpie & Stump Road level crossing at 50.653km. The approach operation for all lines will be by level crossing predictors and healthy state lights will be provided. (O 704/88)

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X WN33/1988 HEIDELBERG. Nos 4 and 5 roads have been abolished. Posts 3 and 5 were abolished. Levers Nos 17, 18, 20, 26 and 28 were sleeved normal.

X 22.8.1988 LALOR. New signalling diagram No 31'88 (Ruthven-Epping) became effective and diagram No 23'88 (Ruthven-Epping) is cancelled. The alterations are as follows:-
1. The existing relay interlocking was abolished and replaced by a new interlocking and panel.
2. The down end points were brought into operation and both ends are now worked by electro-hydraulic point machines.
3. All existing two position signals were abolished and replaced by new three position signals. LAL104 and LAL106 are two position signals and apply to the single line section to Epping which is currently worked by Train Staff and Ticket. LAL102 is fitted with a route indicator.
4. Up home signal No 10 was converted to automatic signal T614.
5. Up home departure signals LAL103 and LAL105 apply to the single line section to Keon Park.
6. Pedestrian boom barriers were provided at Paschke Crescent.
7. A pilot key box was provided adjacent to signals LAL103 and LAL105 and when the key is withdrawn, these signals will be held at Stop. (D 2419/88)

X 26.8.1988 BUNYIP-LONGWARRY-WARRAGUL. New signalling diagram No 18'88 (Garfield-Longwarry) became effective and diagrams Nos 2'52 (Longwarry) & 26'85 (Garfield-Bunyip) are cancelled. The alterations are as follows:-
1. The electric staff system between Bunyip and Longwarry, and the double line block system between Longwarry and Warragul was abolished and replaced by three position signals throughout.
2. The signal boxes at Bunyip and Longwarry were abolished.
3. All two position signals at Bunyip and Longwarry were removed.
4. The operation of the single line is as described in circular D 660/88.
5. The hand gates at Yannathan Road level crossing, Longwarry, were abolished and replaced by boom barriers. The boom barriers are interlocked with the signalling system.
6. The following three position signals were brought into service - D2596, D2645, down home No 16, up home No 24, D2806, D2951, D2980, D3017, D3052 and D3149. (NOTE: These last three signals are shown on diagram No 16'88.)
7. Post No 36 at Warragul was converted to automatic signal D3202 however the control from Warragul remains.
8. Switching facilities were provided at Warragul. (D 705/88)

WN 33/1988 HEAD END POWER INSTRUCTIONS. To ensure that all passengers have alighted safely from passenger cars serviced by HEP, the HEP units are not to be switched off unless the train has been stationary for three minutes. (D 380/88)

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