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SOCIETY CONTACT INFORMATION

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MINUTES OF MEETING HELD FRIDAY 10 NOVEMBER 2017, AT THE SURREY HILLS NEIGHBOURHOOD CENTRE, 1 BEDFORD AVENUE, SURREY HILLS, VICTORIA.

Present: – Wilfrid Brook, Glenn Cumming, Graeme Dunn, Michael Formaini, Ray Gomerski, Chris Gordon, Judy Gordon, Andrew Gostling, Chris Guy, David Jones, David Langberg, David Langley, Phillip Miller, Laurie Savage, Brian Sherry, David Stosser, Stuart Turnbull and Andrew Wheatland.

Apologies: – Bill Johnston, Rod Smith and Andrew Waugh.

The President, Mr. David Langley, took the chair & opened the meeting at 20:04 hours.

Minutes of the September 2017 Meeting: – Accepted as read. Graeme Dunn / Phillip Miller. Carried.

Business Arising: – Nil.

Correspondence: – Letter to David Ward at Metro Trains Melbourne thanking him for granting permission for the signal box tour.

Letter to Surrey Hills Neighbourhood Centre with dates for meetings in 2018.

Letter to Brett Cox welcoming Brett to membership of the SRSV.

Letter to John Hosking welcoming John to membership of the SRSV.

David Stosser / Brian Sherry. Carried.

Reports: – Tours. A report on the successful signal box tour in September 2017 was provided. Suggestions are invited for future tours.

David Langley reported on the recent productive work session at the Archives Room in Seymour.

General Business: – David Langley reported that the railway station at Hughesdale has been demolished.

Phillip Miller reported on the works between Maryborough – Ararat. The final arrangements for the junction at Ararat are not known.

Chris Gordon provided details about various projects in the Metropolitan District. A summary of the discussion follows: –

- The proposal for single line working between Fairfield – Alphington has been abandoned.
- A seven week occupation between Clifton Hill – Macleod planned for level crossing removal works commences at the end of February 2018.
- It was suggested that the Caulfield – Dandenong level crossing removal project is running late and is over budget.
- An occupation between Yarraman – Noble Park planned for level crossing removal works commences in April 2018.
- An occupation planned for level crossing removal works at Clayton commences in June 2018.

(Front cover) Sometimes you are just in the right place at the right time. The distant signals at Northcote and Thornbury in the mid 1980s technically still worked, but I never saw any of them cleared except this once. On the 8 July 1985 I was taking some pictures of the gatehouses between Croxton and Thornbury. I then walked to Croxton to catch the train to Uni and was astonished to find the Signalman at Northcote was clearing the Up Distant for the electric trains. Of course, I'd finished my one roll of film, so a frantic hunt for a chemist ensured. Fortunately, the Signalman was still clearing the Up Distant when I returned, and I was able to take this photo. I have no idea why the Signalman was doing this – it must have been causing chaos at Arthurton Rd. The Home signal on this Post was worked by the gatekeeper at Beavers Road. The battery box and overhead line wire for the distant signal repeater are on the left of the post – note that oil lamps are used to give the night time aspect. Photo Andrew Waugh

- An occupation planned for level crossing removal works at Carnegie and Murrumbeena commences in September 2018.

David Stosser advised that the connections to Siding "A" at Dandenong would be removed during October 2018.

The Richmond – Burnley re-signalling project was discussed.

David Langley discussed the commissioning of boom barriers at numerous level crossings on the Warrnambool Line.

Speed limits during periods of hot weather were discussed.

David Stosser provided a report on progress with the new railway station at Southland. This railway station is expected to open on Sunday 26 November 2017.

Syllabus Item: – The President introduced Secretary Glenn Cumming to present the Syllabus Item in the absence of Roderick B. Smith.

Glenn presented the 28th annual screening of slides from the collection of the late Stephen McLean.

This year's presentation featured Stephen's first trip to North America in December 1981, accompanied by Rod Smith.

Using notes prepared by Rod, the slides showed views of Stephen and Rod's travels by various Amtrak trains and other operators (e.g. Ontario Northland) from Chicago USA to Halifax Canada via New York, Trenton, Boston, Montreal and Toronto. The presentation concluded with Stephen and Rod arriving at the Gander International Airport in Newfoundland by ferry and bus.

The presentation was enjoyed by those present.

At the completion of the Syllabus Item, The President thanked Glenn (and Rod for the preparation) for the entertainment & this was followed by acclamation from those present.

Meeting closed at 21:57 hours.

The next meeting will be on Friday 16 February, 2018 at Seymour.

SIGNALLING ALTERATIONS

The following alterations were published in WN 43/17 to WN 51/17 (the last issue for 2017), and ETRB A circulars. The alterations have been edited to conserve space. Dates in parenthesis are the dates of publication, which may not be the date of the alterations.

06.10.2017 Rosanna (LXRX web site)

At 2030 hours on Friday, 6.10., the station was closed to passengers due to the level crossing removal project.

25.10.2017 Dobie (SW 160/17 & 162/17, WN 49)

On Wednesday, 25.10., boom barriers were provided at the passive crossing at Brady Rd (201.198 km). The boom barriers will be operated by axle counter equipment. Healthy state indicators, yellow whistle boards, and remote monitoring equipment were provided. Diagram 44/17 (Wendouree – Beaufort) replaced 2/16.

This marks the abolition of the last passive level crossing between Ballarat and Ararat, except Gorrin Cattle Yard Rd (202.838 km) which is fitted with frangible gates.

26.10.2017 Carnegie (SW 300/17, WN 41)

Between Thursday, 26.10., and Thursday, 16.11., Koornang Rd will be closed to traffic at various times to allow construction of the viaduct. The Blackwood Ave pedestrian crossing will be temporarily reopened when Koornang Rd is closed to pedestrians.

(31.10.2017) Issue and return of authorities and occupations (SWP 12/17, WN 44)

Issuing and returning Absolute Occupations and Booked Out Track in the Metro area can be performed using voice recorded communication facilities. These are recorded signal post telephones, recorded PABX telephones (including via an adjacent signal box), or DTRS radio.

A protocol for the issue of 'Work on Track Authorities' via voice recorded communication facilities was issued.

All suburban signal boxes have DTRS radio except Elsternwick. The following signal boxes have recorded PABX telephones: Newport, Werribee, Sunshine, Kensington, Craigieburn (including Sunbury panel), Epping (including Hurstbridge panel), Burnley, Ringwood, Caulfield, Westall (via Dandenong), Dandenong, Pakenham, and Frankston. The following signal boxes have recorded post phones: Newport, Werribee, Sunshine, Kensington, Craigieburn (including Sunbury panel), Hurstbridge panel (at Epping), and Caulfield.

SWP 5/16 is cancelled.

31.10.2017 **Southern Cross** **(SW 325/17, WN 44)**
On Tuesday, 31.10., Home 002 (City Circle Loop ramp) was converted to LED.

01.11.2017 **Southern Cross** **(SW 326/17, WN 44)**
On Wednesday, 1.11., Home 200 (Burnley Loop ramp) was converted to LED.

02.11.2017 **Southern Cross** **(SW 327/17, WN 44)**
On Thursday, 2.11., Home 302 (Burnley Loop ramp) was converted to LED.

02.11.2017 **Kyneton** **(SW 164/17, WN 44)**
On Thursday, 2.11., the automatic pedestrian gates at Mollison St (91.443 km) was upgraded to include emergency gate control locks.

09.11.2017 **Macleod – Watsonia** **(SW 335/17, WN 44)**
Between Sunday 5.11., and Thursday, 9.11., Automatic MCD113 was converted to a tri-colour LED and Automatic S604 was replaced by a new tri-colour LED mast 20 metres on the Up side of Watsonia platform.

10.11.2017 **Ultima** **(TON 111/17, WN 46)**
On Friday, 10.11., the Down end main line points at Ultima (394.362 km) were booked out of service due to poor sleeper condition. The siding remains accessible via the Up end points. NOTE: This set of points is at the Down end of Ultima siding, both points at Ultima Sub Terminal siding remain in use.

13.11.2017 **Birregurra** **(SW 167/17, WN 45)**
On Monday, 13.11., boom barriers were provided at the passive level crossing at Powers Lane (132.600 km) on the Up side of Birregurra. Operation is by axle counters. Healthy state indicators, yellow whistle boards, and remote monitoring were provided. Amend Diagram 118/14 (Birregurra – Colac).

14.11.2017 **Terang** **(SW 171/17 &172/17, WN 45)**
On Tuesday, 14.11., boom barriers were provided at the passive level crossing at Coombes Rd (226.182 km) and Pekins Lane (222.903 km). NOTE: Harris Lane has been renamed Pekins Lane to match the local council signage. Operation is by axle counters. Healthy state indicators, yellow whistle boards, and remote monitoring were provided. Amend Diagram 50/17 (Panmure – Sherwood Park).

15.11.2017 **Terang** **(SW 170/17, WN 45)**
On Wednesday, 15.11., boom barriers were provided at the passive level crossing at Cameron Rd (221.687 km). Operation is by axle counters. Healthy state indicators, yellow whistle boards, and remote monitoring were provided. A notice board is provided on the Up side of Seymour St at Terang lettered "Max speed to Cameron St 90 km/h". Amend Diagram 50/17 (Panmure – Sherwood Park).

15.11.2017 **Garvoc** **(SW 168/17, WN 45)**
On Wednesday, 15.11., boom barriers were provided at the passive level crossing at Rec Reserve Rd (aka School Rd) (233.836 km). Operation is by axle counters. Healthy state indicators, yellow whistle boards, and remote monitoring were provided. Amend Diagram 50/17 (Panmure – Sherwood Park).

16.11.2017 **Epsom** **(SW 173/17, WN 45)**
On Thursday, 16.11., boom barriers were provided at the existing flashing lights at Heinz St (167.309 km). Operation was converted to axle counters. Healthy state indicators, yellow whistle boards, and remote monitoring were provided. Amend Diagram 20/13 (North Bendigo Junction).

18.11.2017 **Winchelsea** **(SW 179/17, WN 45)**
On Saturday, 18.11., boom barriers were provided at the passive level crossing at Austin Road (113.011 km). Operation is by axle counters. Healthy state indicators, yellow whistle boards, and remote monitoring were provided.

The existing two position Up Automatic at Winchelsea now works in conjunction with Austin Road in addition to Hesse St (113.557 km).

Amend Diagram 24/17 (Moriac - Winchelsea).

18.11.2017 **Camberwell** **(SW 314/17, SWP 14/17, WN 46 & 48)**
Between Saturday, 18.11., and Monday, 20.11., M23A dual control point machines were provided on Points 206 & 243 and both ends of Crossovers 216, 211, 221, & 231. These point machines can be manually operated by qualified Signallers. Amend Diagram 77/13 (Auburn – East Camberwell).

Burnley Group Operating Procedure 4 (Camberwell) Clause (c) (Failure of Points) was amended to cover the alteration of the point machines.

20.11.2017 **Upfield** **(SW 353/17, WN 47)**
On Monday, 20.11., the SSI and Sigmap data were revised to reflect the removal of the Camp Rd level crossing controls. In addition, the Up and Down approaches for Box Forest Rd and the Gowrie station pedestrian crossing were modified.

20.11.2017 **Carnegie** **(SW 352/17, WN 47)**
On Monday, 20.11., the station will reopen for passengers. The express/stopping selection for Koornang Rd was reinstated.

26.11.2017 Southland & Cheltenham (SW 332/17, WN 45)

As from 0600 hours on Sunday, 26.11., Southland was opened for passengers.

The Stopping controls for the pedestrian crossings and level crossings were restored to service.

Cheltenham signal box will be switched in M-F 0600-0845, 1600-1715, & 1945-2015.

(28.11.2017) Rosanna (SW 361/17, WN 48)

The Rosanna station pedestrian crossing (15.356 km) was permanently closed to public access due to station demolition works.

28.11.2017 Murchison East (TON 122/17, WN 49)

On Tuesday, 28.11., Nos 3 & 4 Roads (147.038 km to 147.409 km) were booked back into service.

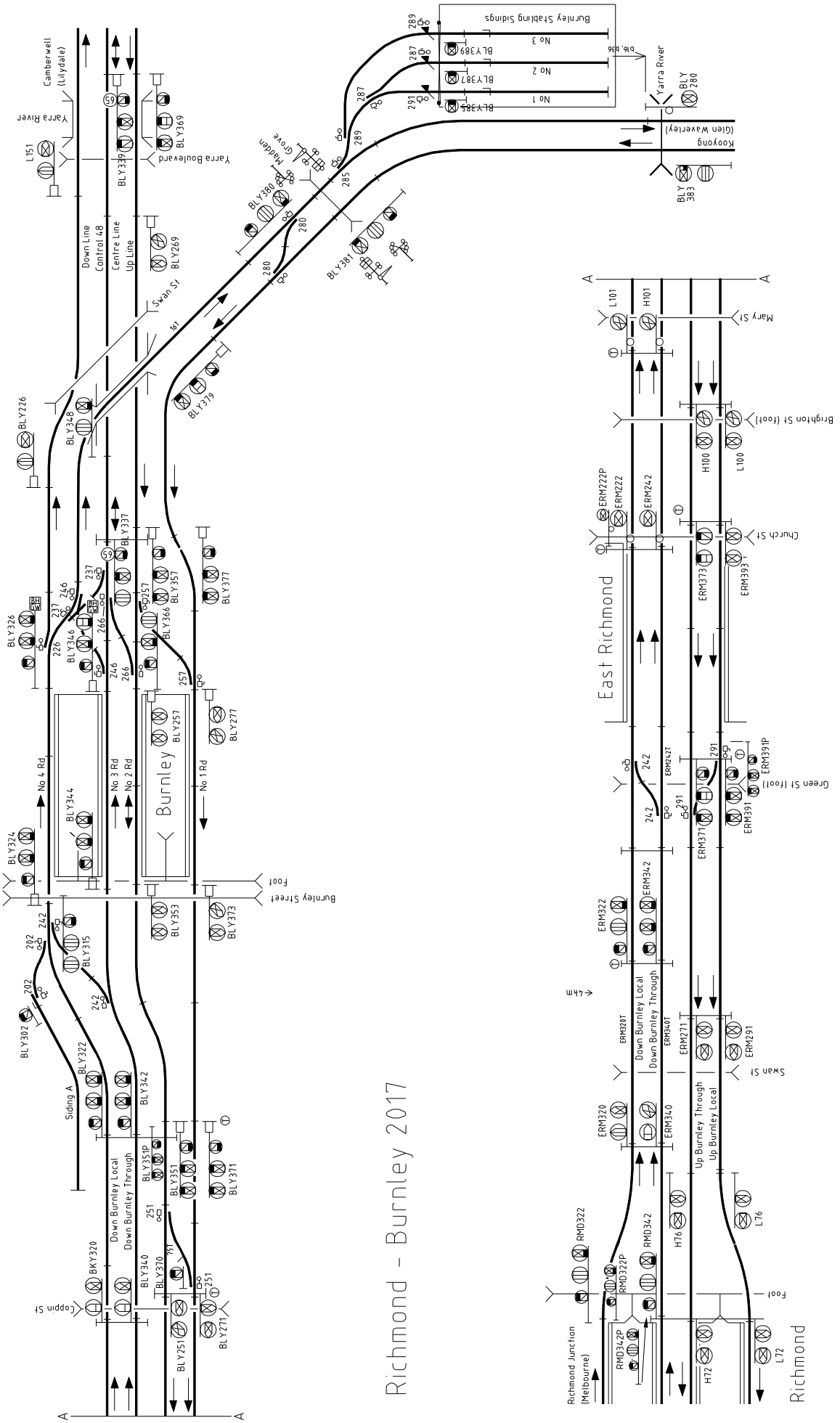
30.11.2017 Richmond - East Richmond – Burnley (SW 65/17 & 66/17, SWP 4/17, WN 45 & 48)

Between Thursday, 30.11., and Wednesday, 6.12., the section between Richmond and Burnley was resignalled.

- Burnley signal box was closed. A Westlock CBI was provided to control the signalling between Richmond platform, Burnley, and Burnley Stabling Sidings. The points and signals are now worked from Metrol (Burnley control panel).
- None of the East Richmond, Burnley, or Burnley Stabling Sidings interlockings can now switch out. The Illuminated letter 'A's were removed from the Home signals at East Richmond, Burnley, and Burnley Stabling Sidings.
- Camberwell and Kooyong signal boxes became fringe boxes to Metrol. TCMS fringe signal box equipment was installed to transmit train describer numbers.
- The existing track circuits between Richmond and the Down side of Burnley were replaced by axle counters. Signs lettered 'Start AXC' and 'End AXC' are provided to indicate the start and end of the section where axle counters are used as the means of detecting rail vehicles.
- The Down lines between Richmond and Burnley were resignalled using 3 aspect signals (the existing signals were largely redressed, though some were removed). The 4 aspect signalling was retained on the Up lines.
- The 25Hz signalling power was replaced by 50Hz.
- Automatics ERM306, ERM328, & L89 were abolished.
- Automatics L71, H71, H83, L156, BLY312, & BLY281 were redressed as Homes and renumbered RMD322, RMD342, ERM342, BLY369, BLY324, & BLY379 respectively.
- Dwarfs BLY321 & BLY340 were replaced by Homes BLY315 & BLY366 respectively.
- Homes ERM304, BLY310, BLY316, BLY332, BLY334, BLY336, BLY338, BLY343, BLY345, BLY375, BLY377, BLY395, & BLY397 were renumbered ERM322, BLY322, BLY326, BLY342, BLY344, BLY346, BLY348, BLY337, BLY339, BLY351, BLY357, BLY371, & BLY377 respectively.
- Dwarfs BLY318, & BLY372 were renumbered BLY302, & BLY370 respectively.
- Automatics H77, L77, H80, L80, H95, L95, L96, H107, L107, H108, L108, L139, H163, BLY273, BLY277, BLY293, BLY297, & BLY379 were renumbered ERM340, ERM320, ERM271, ERM291, ERM242, ERM222, ERM393, BLY340, BLY320, BLY251, BLY271, BLY226, BLY248, BLY353, BLY257, BLY373, BLY277, & BLY269 respectively.
- Co-acting signals ERM222P, ERM391P, RMD322P & RMD342P were provided.
- Post BLY226, BLY257, BLY269, BLY277, BLY324, BLY339, BLY344, BLY346, BLY351, BLY353, BLY357, BLY369, BLY371, BLY373, BLY377, BLY379, & L151 are tilt masts.
- The theatre indicator was removed from Home BLY375.
- Homes BLY337 & BLY339 were provided with '65' speed indicators.
- Crossovers 228 at East Richmond was renumbered 242. All points at East Richmond were provided with dual control point machines.
- Burnley Crossovers 217, 231, 235, 243, 275, & 277 were renumbered 237, 242, 246, 266, 251, & 257, Points 215, & 219 were renumbered 226, & 202, and Catch 219 was renumbered 202 respectively.
- Burnley Points/Catch 202 and Points/Derail 287, 289, & 291 were provided with auto normalise function
- Down Automatic L101 was altered to only display Normal speed aspects.

Metro Trains Burnley Group Operating Procedure 3 (Richmond to Burnley and Burnley Stabling Sidings – Failure of Signals) was re-issued.

Diagrams 37/16 (Flinders St – Richmond), 39/16 (East Richmond – Glenferrie) & 35/16 (Heyington – Darling & Burnley Stabling Sidings) replaced 97/12, 83/12, & 39/15 respectively.


Richmond - Burnley 2017
Burnley
East Richmond
Richmond
Burnley Sidings
No 1
No 2
No 3
Yarra River
Kooyong
(Glen Waverley)
Camberwell
(Lilydale)
Yarra River
Yarra Boulevard
Down Line
Control 48
Centre Line
Up Line
Swan St
Burnley Street Foot
Coppin St
Siding A
Down Burnley Local
Down Burnley Through
Up Burnley Through
Up Burnley Local
No 4 Rd
No 3 Rd
No 2 Rd
No 1 Rd
Mary St
Brighton St (Foot)
Church St
Green St (Foot)
Swan St
Foot
Richmond Junction
(Melbourne)

30.11.2017 **Holmesglen – Jordanvale** **(SW 333/17, WN 45)**

On Thursday, 30.11., the pedestrian crib crossing at Collins St were replaced by automatic pedestrian gates with magnetically latched emergency exit gates. Down Automatic DG473 was interlocked with the pedestrian Gates.

Diagram 9/17 (East Malvern – Glen Waverley) replaced 63/12.

04.12.2017 **Ballarat** **(SW 190/17, WN 49)**

On Monday, 4.12., Operating Procedure 70 (Ballarat – Ararat Staff Working) was reissued. The alterations allow for the provision of a Signaller at Wendouree for specified trains, and the clarification of Signallers duties for the custody of the Train Staff at Ballarat. SW 115/17 was cancelled.

04.12.2017 **Ararat** **(SW 190/17, WN 49)**

On Monday, 4.12., Operating Procedure 82 (Ararat) was reissued. The alteration is to clarify the Signallers duties for custody of the Train Staff at Ararat. SW 116/17 was cancelled.

04.12.2017 **Maryborough** **(SW 187/17, 191/17, & 193/17, WN 48 &49)**

Between Thursday, 30.11., and Monday 4.12., the following alterations took place:

- A gauge splitter was provided on the Up side of Home MYB6 at the Up end. This gauge splitter will form the physical junction to the Ararat line.
- Points 21, leading from the Castlemaine line to the Locomotive Depot and Stabling Sidings, were removed. Plain track is now provided leading towards the Stabling Sidings/Locomotive Depot.

Operating Procedure 80 (Maryborough) was reissued to reflect these alterations. SW 120/17 was cancelled.

Diagram 48/17 (Maryborough) replaced 114/12.

04.12.2017 **Dunolly** **(SW 188/17, 191/17, & 193/17, WN 48 & 49)**

Between Thursday, 30.11., and Monday, 4.12., the following alterations took place:

- The broad gauge track was slewed to a new alignment on the Up side between the Burnt Creek bridge and the Up end of the existing No 1 Road.
- A gauge splitter (DLY7) was provided at the Up end on the Down side of the Burnt Creek bridge. This gauge splitter will direct the standard gauge line straight ahead along the former main line/No 2 Road.
- The former Down end trailable loop point (DLY27) on the Down side of Thompsons Rd was replaced by a gauge splitter. The gauge splitter will direct the standard gauge line straight ahead along the former No 2 Road.
- Points A were abolished.

Operating Procedure 84 (Dunolly) was reissued to reflect these alterations. SW 158/17 was cancelled.

Diagram 64/17 (Dunolly) replaced 42/17.

(05.12.2017) **Epsom – Echuca** **(SW 189/17, WN 49/17)**

Operating Procedure 108A (Epsom – Echuca, Operation of Sidings) was issued. The procedure includes a description of how the points are secured at Goornong, Elmore, and Rochester, and a local operating procedure for train operations at Elmore.

05.12.2017 **Pomborneit** **(SW 169/17, 180/17, 183/17, & 186/17, WN 45, 47 & 48)**

On Tuesday, 5.12., boom barriers were provided at the passive level crossing at Craigs Lane (181.080 km) and Carters Road (185.648 km). Operation at both level crossings is by axle counters. Healthy state indicators, yellow whistle boards, and remote monitoring were provided. Amend Diagram 30/14 (Camperdown - Terang).

06.12.2017 **Armytage** **(SW 182/17, WN 48)**

On Wednesday, 6.12., boom barriers were provided at the passive level crossing at Prices Lane (127.981 km). Operation is by axle counters. Healthy state indicators, yellow whistle boards, and remote monitoring were provided. Amend Diagram 24/17 (Moriac - Winchelsea).

07.12.2017 **Birregurra** **(SW 185/17, WN 48)**

On Thursday, 7.12., boom barriers were provided at the passive level crossing at Whytcross Lane (130.550 km). Operation is by axle counters. Healthy state indicators, yellow whistle boards, and remote monitoring were provided. NOTE: This crossing has been renamed from 'Whytcross Road' to match the local signage. Amend Diagram 24/17 (Moriac - Winchelsea).

07.12.2017 **Colac - Camperdown** **(SW 201/17, WN 50)**

On Thursday, 7.12., local axle counter resets were provided at Back Larpent Rd (158.478 km) and Wiridigil Lane (191.535 km).

11.12.2017 **Dunnstown** **(SW 197/17, WN 50)**

On Monday, 11.12., boom barriers were provided at the existing flashing lights at Tierney Rd (104.156 km). Operation of the equipment was converted to axle counters. Healthy state indicators, yellow whistle boards, and remote monitoring were provided. Amend Diagram 18/13 (Bungaree).

11.12.2017 **Rosanna** **(SW 361/17, WN 48)**
On Monday, 11.12., the Rosanna station pedestrian crossing (15.356 km) was restored to use for workers on the grade separation project.

11.12.2017 **Clayton – Westall** **(SW 374/17, WN 50)**
On Monday, 11.12., the left hand boom barrier arm (No 1) for the westbound carriageway of Centre Rd was reinstated.

(12.12.2017) **Track Closure Devices** **(SW 202/17, WN 50)**
A track closure device can be used to protect an Absolute Occupation or a worksite within a Track Warrant. A track closure device is a red reflective 'Stop' sign below red LED flashing lights. The device must be clamped to the left hand rail in the direction of rail traffic and the clamp secured by a padlock. The key to the padlock must be controlled by the Track Force Protection Co-ordinator.

A permit limit marker (or worksite delineation marker) can be used to mark the boundary of a 'Permit for Foul' within an Absolute Occupation. The marker has two LED flashing lights on each side of the case. The two red lights are to face rail traffic approaching the worksite, and the two yellow lights are to face rail traffic exiting the worksite. The marker is clamped to the rail head and secured by a padlock. The marker replaces a Hand Signaller.

SW 102/15 and 26/16 are cancelled.

(12.12.2017) **Protective Local Signal Blocking** **(SW 203/17, WN 50)**
A new Operating Procedure No 135 (Supplementary Infrastructure Operations, No. 26, Protective Local Signal Blocking) was issued. SW 30/17 was cancelled.

(12.12.2017) **Murchison East** **(SW 200/17, WN 50)**
Operating Procedure 106 (Murchison East) was reissued. Instructions have been added re the securing of hand points to facilitate assisted loading of trains in Nos 3 & 4 Roads. SW 89/12 is cancelled.

12.12.2017 **Pettavel** **(SW 181/17, 194/17 & 196/17, WN 48 & 49)**
On Tuesday, 12.12., boom barriers were provided at the passive level crossing at Willowite Road (92.172 km). Operation is by axle counters. Healthy state indicators, yellow whistle boards, and remote monitoring were provided. Amend Diagram 24/17 (Moriac - Winchelsea).

12.12.2017 **Buckley** **(SW 184/17, 192/17 & 195/17, WN 48 & 49)**
On Tuesday, 12.12., boom barriers were provided at the passive level crossing at Mount Pollock Road (105.549 km). Operation is by axle counters. Healthy state indicators, yellow whistle boards, and remote monitoring were provided. Amend Diagram 24/17 (Moriac - Winchelsea).

12.12.2017 **Wendouree** **(SW 198/17, WN 50)**
On Tuesday, 12.12., the crib crossing at Forest St (122.303 km) was replaced by automatic pedestrian gates and emergency gate control locks. Remote monitoring equipment was provided. Amend Diagram 44/17 (Wendouree - Ballarat).

13.12.2017 **Gowrie – Upfield** **(SW 373/17, WN 50/17)**
From 0400 hours on Wednesday, 13.12., Camp Road level crossing was abolished and replaced by an over line bridge (16.030 km). The control panel indications at Upfield for Camp Road were removed.

Diagram 17/17 (Batman – Upfield) replaced 137/10.

16.12.2017 **Holmesglen – Jordanville** **(SW 383/17, WN 51)**
On Saturday, 16.12., automatic pedestrian gates and magnetically latched emergency exit gates were provided at the Collins St pedestrian crossing. Down Automatic DG473 was interlocked with the operation of the gates.

Diagram 9/17 (East Malvern – Glen Waverley) replaced 63/12.

18.12.2017 **Ballarat** **(SW 199/17, WN 50)**
On Monday, 18.12., the pedestrian gates at Lydiard St (113.896 km) were provided with emergency gate control locks. Remote monitoring equipment was provided. Amend Diagram 98/12 (Ballarat).

21.12.2017 **Parkdale** **(SW 375/17, WN 51)**
On Thursday, 21.12., magnetically latched emergency exit gates were provided at Parkers Rd.

XX.09.2017 **Aspendale - Edithvale** **(SW 266/17, 284/17, WN 36, 39)**
On Monday, 18.9., the crib crossing at Denman Ave will be replaced with automatic pedestrian gates and magnetically latched emergency gates. Amend Diagram 25/11 (Cheltenham – Chelsea).

End£

NSWGR SIGNAL & TELEGRAPH BRANCH
1939-1945
(HISTORY OF THE NSW RAILWAYS DURING THE WAR PERIOD)

(Continued from Somersault Vol 40 No 6)

MAIN NORTHERN LINE

9 Hornsby – Newcastle

The unprecedented traffic on this section throughout the War was handled satisfactorily without many additions or alterations to existing signalling facilities.

In 1940 a section of automatic signalling was installed between Wyong and Wyee to give increased train movements and in 1944 extensive additions were made at Hawkesbury River in conjunction with the provision of a Down Refuge Loop.

The miniature lever machine controlling movements over the gauntlet track on Hawkesbury River Bridge was replaced by a larger machine of similar type to control all power operated signals in addition to those on the Bridge.

Traffic congestion became so acute in July 1945, owing to a 5 mph speed restriction over the full length of the Bridge that motor operated catchpoints were installed on the Up Road at the Northern end. Special circuiting was provided to reduce the number of line wires and at the same time to accelerate the train working.

10 Newcastle – Werris Creek

This section has been dealt with previously in regard to additions and alterations carried out to provide for the diversion of sea-borne traffic.

Other developments, however, called for special consideration from time to time, and in two instances a large amount of work was entailed.

The establishment of a Military Camp at Greta, early in the War, necessitated the termination of trains at that station. Both platforms were extended and all connections north of the platforms had to be relocated while special signalling was provided for terminating Down trains and engine run round and shunting facilities.

The second major installation carried out was in association with a new munitions factory at Rutherford which came into production early in 1942.

The Racecourse Branch line was re-opened and extensions made for handling employees trains at the factory terminus. Electric Train Staff working was introduced and improved connections were made at Rutherford Junction on the Main Line.

Another installation undertaken on behalf of the Commonwealth Government was a new siding at Myambat between Denman and Merriwa. An intermediate staff instrument and ground frame were provided. The long 35 mile section, Denman - Merriwa, was divided at Sandy Hollow to permit the despatch of a train to Myambat before the previous train had arrived at Merriwa.

10.1 Telephone Facilities

The most important addition to the telephone services on this section was a single channel carrier system from Sydney to Werris Creek which, together with a similar service between Armidale and Glen Innes, and a trunk channel between Werris Creek and Armidale, permitted through communication between Sydney and Armidale.

In the Newcastle Coal Road Area a complete Train Control System was installed enabling speeder handling of Coal traffic. The system was linked to the existing Newcastle Control, and complete co-operation was thereby obtained between coal road traffic and main line operations.

11 Werris Creek – Wallangarra

The methods employed on the Tocumwal - Narrandera section for facilitating the opening and closing arrangements at crossing loops, which were an innovation at the time that section was dealt with, were adopted, later, on the Main Northern line between Werris Creek and Wallangarra.

The modified emergency type of loop was used, with the difference, that no provision was necessary for Guards to shunt the sidings when the stations were closed. Loops of this type were installed at the following stations:

Nemingha	Kelly's Plains
Limbri	Dundee
Warrungen	Gresley
Wollun Loop	Bluff River Loop
Pundar	

At Bluff River Loop fabricated steel signal posts were used for the first time.

On the section Woolbrook - Walcha Road, tablet instruments were replaced by Electric Train Staff instruments to provide for automatic working.

In addition to alterations at West Tamworth, Armidale, Bolivia and Tenterfield, additional listings were installed at Wallangarra on both the NSW and Queensland sides.

Two of these sidings were laid in off the third rail section leading to the meatworks. In the Queensland turnout it would found necessary to close the frog of the 'K' crossing for the direction concerned, where the Queenland rail cut the NSW rail.

This was successfully carried by the Department, and the single lever which operated the turnout points and the catchpoints was also made to close the correct frog for the direction of traffic for which the points were set.

NORTH COAST LINE

12 West Maitland – South Brisbane

Prior to the war, very heavy traffic passed over the 493 miles of single line between West Maitland and South

Brisbane, and quite early it was realised that, unless considerable additional facilities were provided in the way of crossing stations and extra storage and shunting sidings, it would be impossible adequately to handle the war time traffic. With this end in view, an extensive programme of new works was prepared and these involved very heavy calls on the Signal and Telegraph Branch to provided additional signalling facilities.

As early as 1941 the lack of crossing facilities was felt on the long sections between Border Loop and South Brisbane, and the 31 1/2 mile section, Glenapp - Kagaru was divided in November of that year, when an automatic type crossing loop was provided at Tamrookum. This was the first crossing loop to be constructed by the NSW Railways over the Queensland border, and a special feature of the work was the pole line construction within the limits of the loop. Short 15 feet poles, constructed from old rails, were interposed between existing wooden poles to give the reduced spans necessary to carry the insulated signalling wires.

Two more crossing loops of the automatic type were later provided, in 1942, over the Queensland border at Bromelton and Greenbank.

Although these loops were of the automatic type, provision was made for staffing them when necessary, to avoid delays to through trains, and it was necessary to provide special accommodation to house the staff, a 12′ x 10′ cabin being provided for the purpose.

The opening of Bromelton brought the intermediate staff station, Round Mountain Quarry Sidings, between two automatic crossing loops, Tamrookum and Bromelton, necessitating a special circuit arrangement to enable the train crew to withdraw a staff from the intermediate instrument, an operation which normally requires an Officer at the controlling station. This was accomplished successfully, and Round Mountain is the only place where this method is in operation.

In 1941, a standard gauge siding was provided at Beaudesert Road to serve the Rocklea Munition Works. This siding crossed the Queensland main line and was controlled by staffs for the NSW section, Clapham - Kagaru, and the Queensland section Rocklea - Cooper's Plains. To achieve Queensland control, auxiliary staff instruments were provided at Rocklea and Beaudesert Road Signal boxes, whilst an Intermediate staff instrument for the NSW section was provided at Beaudesert Road.

This method of working did not adequately meet the increasing demands, notwithstanding the opening of Greenbank as an automatic crossing loop, and in November 1943, Beaudesert Road was opened as a Follow-on Staff station, and the Intermediate instrument withdrawn.

Meanwhile, the provision of additional crossing loops and traffic facilities on other sections was becoming urgent and in May 1942, the first of a series of simplified loops was opened at Kilbride between Paterson and Wallarobba, followed at short intervals by similar loops at Bundook, Kerewong, Gauld's, Braunstone, Mt Neville and Loadstone.

These loops were similar to the modified emergency type, referred to elsewhere, the only difference being the provision of Distant signals instead of Landmarks, which necessitated an 8 lever machine in each case. "Opening" and "Closing" levers were provided to permit of the Down and Up signals being left in the clear position, in the event of it being necessary to close the station temporarily. At these loops, the Staff Huts, Interlocking machine and the Staff Exchanging Platforms, were erected adjacent to one another to form a complete unit.

The opening at Kilbride involved the closing of Martins Creek as a follow-on staff station and the provision of an Intermediate staff instrument for working the Quarry Sidings.

When, in June 1943, the position became critical due to greatly increased military traffic, the position was reviewed and, as a result, a number of additional Crossing Loops were provided and the modified emergency loops referred to above were altered to permit of faster working.

All these loops, with the exception of Gauld's together with the original installations at Coff's Harbour, Kyogle, The Risk and Border Loop, were converted to the centrally operated type, involving, in each case, increasing the size of the interlocking machine to at least 20 levers.

In addition, new centrally operated crossing loops were provided at Nooroo, Yumbunga, Killawarra, Dalhousie Creek, Landrigans, Nana Glen and Kungala. Closing facilities were not provided at these loops, but "U" indicators, operated by a Guard's lever were provided on the Main Line Starting signals to enable Guards to operate the frame whilst the station was unattended.

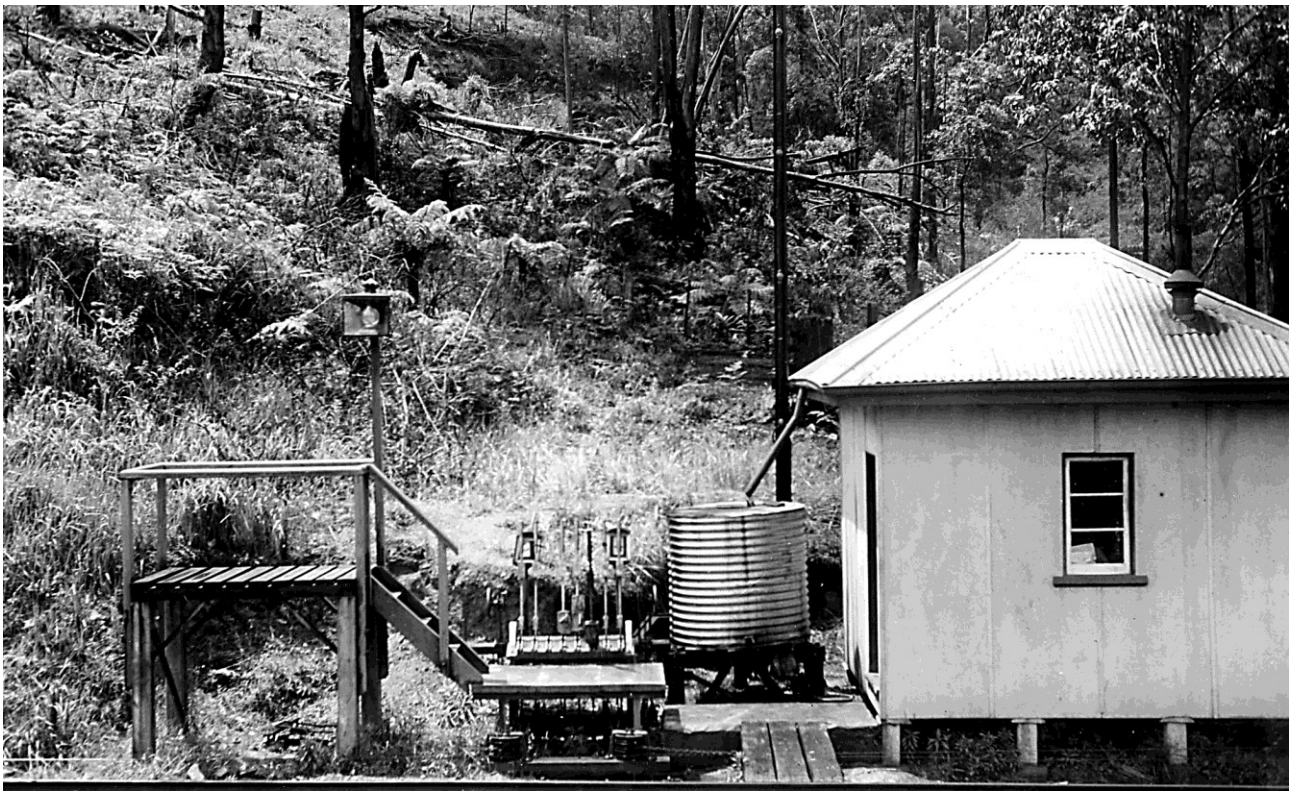
At Kagaru and Glenapp, the Down and Up Main Line working through the crossing loop was abolished in favour of Main and Loop line working and these stations were converted to fully signalled centrally operated loops with "U" indicators on the Starting signals. The Queensland interlocking machine in each box was replaced by a larger machine of NSW type.

Whilst the provision of additional crossing loops gave relief, in as much as traffic was moving more freely, the position in some of the older established yards was becoming acute, and it was decided to increase the accommodation at many of these stations. It was realised, however, that some immediate relief was imperative, and that this could best be provided by easing the restrictions on shunting movements by increasing the distance between the Home signals and Loop points. This work was commenced on 29/6/1943 and by 20/7/1943 fourteen stations had been completed, involving the refixing of 12 Bracket signals, 11 single signals and the provision of 3 new signals.

Meanwhile, the work of enlarging the Yards and improving the signalling facilities was proceeding.

Outer Home signals, with special "Shunting Limit" boards, were provided at Stroud Road, Wingham, Gloucester, South Grafton, Grafton and South Brisbane. The Outer Home signals at South Grafton and South Brisbane were of the Upper Quadrant, power worked type, whilst Upper Quadrant, motor worked Distant signals were provided at Stroud Road, Wingham and South Grafton.

At South Grafton additional Loco sidings were brought into use, whilst at Grafton, the Crossing Loop was extended



Gaulds – this is one of the short lived emergency loops and consisted of a staff exchange platform, an open frame and a staff hut.

and additional Down and Up siding accommodation was provided. This involved the complete re-signalling of the Yard and the erection of a new Signal box to accommodate a 52 lever machine. A feature of this work was that as the Sidings and Loop alterations were completed, they were brought into use, the connections being operated, temporarily, by ground frames, controlled by keys from the old Signal box.

At Glenreagh, Casino and Clapham, extensive alterations and additions to the Yards involved considerable signalling alterations.

Telarah was converted from a Follow-on station to an Electric Train Staff and Crossing station. Although the Crossing Loop was laid in on the Sydney side of the platform, it was necessary, for the convenience of shunting the Down Sidings, to retain the Signal box on the platform and this involved the operation of the points at the Sydney end by electric motor and the provision of an Intermediate Staff instrument for the working of Up trains. An interesting feature of the work at Telarah was the use for the first time on the NSW Railways of dual control points motors, fitted with 'Hand Throw' levers, for operation by the traffic staff in the event of electrical failures. This type of motor was also used at Gloucester.

At Gloucester the points at the Grafton end of the Loop were converted to motor operation and brought under the control of the Signal box.

The provision of additional siding accommodation at Taree and the necessity for providing for future extensions, involved the replacement of the existing Loco and Station Signal boxes, by two new Signal boxes, Taree South (68 levers) and Taree North (32 levers).

Mechanically operated Boom Gates were installed at Macquarie Street level crossing, adjacent to Taree North Box.

The provision of additional platform accommodation at Dungog involved considerable signalling alterations and the existing Signal box was displaced by a new Signal box (36 levers) erected in the new station buildings. A hand operated boom gate, the first of its kind, was provided at the Yard Crossing on the station side of the Back Platform Road.

Whilst the foregoing remarks give a general description of the major works carried out during the War Period, on the section West Maitland - South Brisbane, consideration must also be given to the minor works, carried out concurrently. These included such works as:

1. Signalling for Transit Sidings at various stations
2. A new station and Signal box at Nambucca
3. Provision of Commonwealth Siding at South Grafton
4. Track circuits and electric locks for the security of facing points in some cases where the Home signals were moved out from the points to give greater facility for shunting
5. Provision of indicators and repeaters where the signals were moved to sites which were not under direct observation of the Signalman.

These works, while not involving much in themselves, were, nevertheless a persistent drain on manpower and materials available for the major works, and it needed careful planning and organisation by the administrative staff to enable them to be completed efficiently and expeditiously without undue interference with the major programme.

(Above) Allans Creek – this signal box was actually opened prior to the War. It was initially opened to control the connections to the first industrial sidings into Lysaghts Works. Later the line through here was duplicated and a triangle connection from Unanderra North opened. After the War a further connection was provided into the Australian Iron & Steel's (later BHP) Flat Products Division. This style of signal box, timber and steel framed and clad with fibro sheets, was common for elevated structures between the mid 1930s until the early 1950s.

Whilst statistics do not give a true picture of the work performed, it may be of interest to review a few of the major installations on the North Coast section, over the period of less than five years:

New Crossing Loops	
Type "C"	7
Type "D"	7
Type "E'	3
Converted to Type "D"	13
Total	30
Electric Train Staff instruments	38
Intermediate Train Staff instruments	5
Home signals refined to provide additional shunting facilities	14 stations
Signal boxes	5 (212 levers)

12.1 Telephone Facilities

The volume of traffic handled on the North Coal Line necessitated the extension of the Train Control System from Casino to South Brisbane. As a result of this extension the Control was divided at South Brisbane. Newcastle controlled as far as Taree, as previously.

Telephone services were improvised by connecting a Sydney - Newcastle trunk direct to the Newcastle - South Grafton trunk, thus eliminating switching at Newcastle.

A single channel carrier installed between South Grafton and South Brisbane.

Additional metallic circuits were provided as well on various sections of the line to ease the congestion which resulted from the abnormal traffic.

SOUTH COAST

13 Sutherland – Wollongong and branches

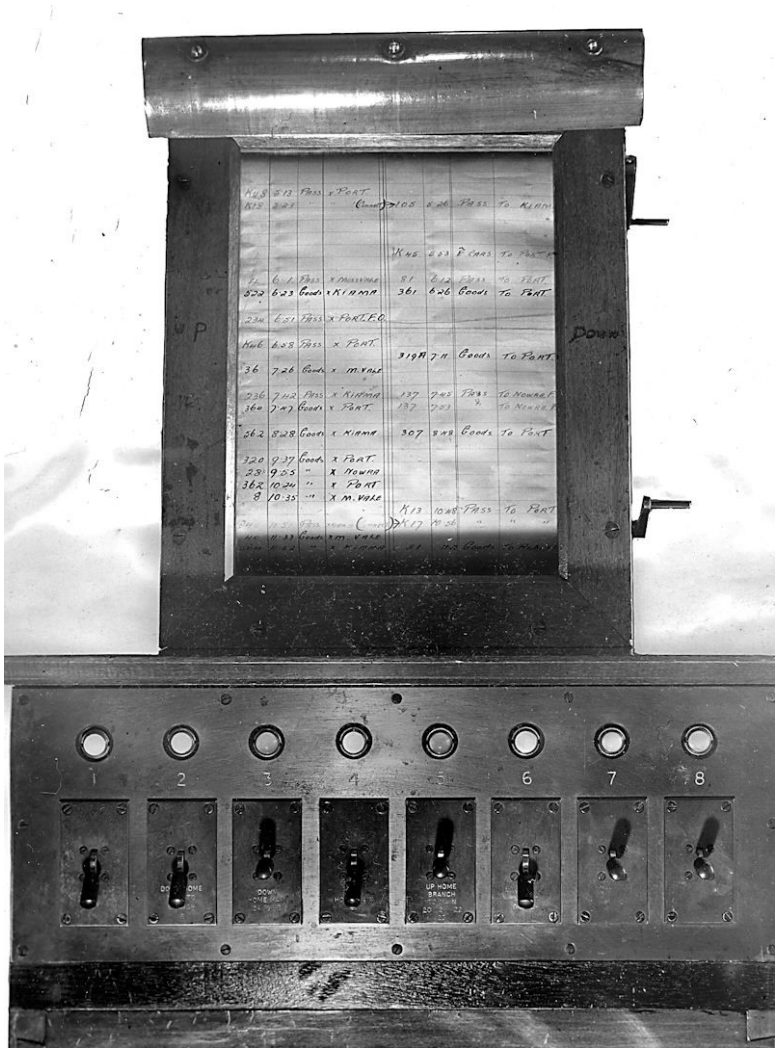
The increased traffic, due to the establishment of heavy industries at Port Kembla, was anticipated during the first year of the War and additional automatic signals were installed on the Loftus - Waterfall Section. Three position signals replaced the two position signals with distants behind, and the sections were split up to reduce sectional clearing times. This work involved the provision of five new signals and the conversion of four 2 position to 3 position signals. The installation was completed in December 1940.

At the same time, an additional telephone line was erected between Loftus Junction and Thirroul, 2 - 200lb copper wires being provided for the full distance.

Three position automatic signals were provided, also, between Otford and Coal Cliff, some six months later, to replace the existing two position system.

14 Wollongong – Port Kembla

The largest project associated with Port Kembla, however, was the duplication of the line between Coniston and Port Kembla North. In addition to the new signal boxes at Coniston and Allan's Creek *(Ed – actually opened in 1937*), automatic signalling was installed on the new double line.



(Left) Coniston – the relay interlocking panel in the new signal box. Above the relay interlocking panel is a timetable panel. This is a roller arrangement and lists all trains in the working timetable, up trains one side and down the other. As trains pass the list is moved to the next due train. In addition to this relay panel, a small mechanical frame was also installed to operate the points and locks in front of the box. The box had been relocated from Woodville Junction after it was replaced by a new signal box beside the Donald Street level crossing. As the signal box was reasonably new it was reused at Coniston where, although a relatively large building, it housed only a small panel and frame.

The interlocking machine provided at Coniston was the first of the new electro-mechanical type.

Track block working was provided between Wollongong and Coniston which necessitated certain alterations at Wollongong, including a power operated Down Starting signal.

Electric power at 240 volts was taken from the Shire Council's Main at various points along the line and adequate provision made for emergency operation in the event of a local power failure.

As the supply of low voltage signal motors was short at the time, advantage was taken of a number of 100 volt direct circuit motors, which were in stock of little value. Special rectifiers were obtained and these motors were operated directly from the Mains without the provision of a battery. The economy in both battery material and low voltage motors, which were needed for country work, was considerable. Batteries were also dispensed with on the track circuits, the direct current relays being operated by alternating current through a rectifier. This was the first occasion in which direct current motors and track relays had been operated in this way.

One other device, used for the first time, was a commercial product known as a "Westrak" Unit. Use of this piece of apparatus enables the feed and relay of a track circuit to be located together and under certain circumstances, economy in the use of control wiring is effected.

15 Unanderra

The opening of the Port Kembla duplication in July 1941, was followed four months later by the opening of the new junction and signalling arrangements at Unanderra.

The methods of interlocking adopted at Coniston were followed at Unanderra, but on a much larger scale. The new layout provided every facility for running and shunting moves in anticipation of the heavy traffic on the Branch line to and from Moss Vale.

Daylight Colour Light Signals and electric dwarf signals were installed and the Yard was completely track locked. The installation comprised a 32 lever mechanical machine and 28 electric levers controlling 41 signals and 9 mechanical points and associated facing point locks.

The problem of supplying current to the large number of direct current track circuits in the Yard was overcome by the provision of two secondary batteries, one at either end of the Yard, and each consisting of 2 - A8 Edison cells. The cells were placed on floating charge with a dry plate rectifier.

In view of the nature of the traffic dealt with in the Yard it was decided to dispense with "overlaps" in the running signal control circuits, thereby simplifying the track locking and effected economies in relays and wiring.

Special emergency power supply arrangements were provided so that in the event of a local shut down of the

power, the track locking continued to function to permit the movement of points.

MAIN SOUTHERN LINE

The record of work performed on the Main Southern Line during the War is, for all practical purposes, a record of the relief afforded the long single line section, as it existed at the commencement of hostilities, between Cootamundra and Albury.

Admittedly alterations and additions were carried out elsewhere, but, in the main, the signalling system, as it existed in 1939, was able to cope with the tremendous traffic between Sydney and Cootamundra throughout the War Period.

16 Junee – Albury

Seven months after the outbreak, Table Top was converted from a Follow-on Staff Station to a fully signalled crossing loop, centrally operated. This was followed, six months later, by the conversion of Yerong Creek to a centrally operated loop.

The Wagga Wagga - Uranquinty section next received attention, and in March 1941, it was divided at Kapooka, and finally, in December 1943, Kinloss was opened as a centrally operated loop, thereby dividing the section Table Top - Albury.

The provision of these additional crossing facilities indicates, clearly, the pressure imposed on this line, the longest remaining section being 12 miles in length, between Culcairn and Gerogery.

From time to time a large amount of work was carried out at Albury. New interlocking machines were installed in both Station and South Signal boxes. Altered and additional Yard arrangements were provided for in Station Box in 1940 and controls for a Victorian Shunting Neck were provided in South Box in July 1942.

Additional siding accommodation on both Up and Down sides of the Main Line necessitated considerable additions to Station box interlocking during 1944-5. A relay unit machine was installed to save mechanical extensions and releasing switch controls were provided for the remote Siding connections. A power worked Outer Home signal with a Distant signal behind, also power worked, and an Intermediate Electric Train Staff instrument at the inlet to the Down Sidings were also provided.

Other works carried out were the extension to the platform at Wagga Wagga and alterations to the connections at the Albury end, and the provision of a Signal box and mechanically operated boom gates at Tarcutta Road Level Crossing, Wagga. Protection of the Level Crossing was necessitated by the heavy road traffic consisting, largely, of military vehicles.

The gates were fully interlocked and special arrangements were made for the Signalman to receive ample warning of the approach of both Up and Down trains. This installation of mechanical booms was the first of its kind outside the Metropolitan Area, similar gates were subsequently provided at Parkes.

17 Cootamundra – Junee

The largest single undertaking during the War, so far as this Branch was concerned, was the duplication of the Cootamundra - Junee Section, together with major alterations to Cootamundra and the Junee Yards. The latter

(Above) Prefabricated relay and battery huts loaded in S wagons at Cootamundra Depot for the Cootamundra – Junee duplication and resignalling

work was not completed although a great deal of preparatory work was done.

The automatic signalling on the through section followed standard practice. Three position signalling was adopted, the controls being on open line wires with a special red lead weather proof covering. 200 miles of this class of line wire were required together with 250 miles of bare copper wire. A special feature was the erection of all battery and relay huts at Cootamundra Depot. They were of timber and fibro construction and fitted with the necessary shelves and terminal boards. Relays were installed and wiring completed prior to loading on trucks for despatch direct to their locations in the field. Portable ramps were used unloading and setting on prepared foundations.

The complete installation, as it now exists, was brought into use in three stages, between March and October 1942, viz: Cootamundra - Tanyinna, Bethungra - Illabo and Illabo - Junee North, in that order. Between Tanyinna and Bethungra the single line was retained pending the completion of the difficult construction work on Bethungra Bank. Relay unit machines were added to the old machines at Cootamundra South and June North to avoid expensive additions to Signal boxes which would be dispensed with when the new Yards were completed.

Siding connections with automatic releasing arrangements were provided at Strattons Siding and at a Commonwealth Oil Storage Siding on the Down side near Cootamundra, also at Frampton and Marinna Goods Sidings whilst at Illabo an interlocking was installed, complete with closing arrangements.

Major items of equipment, apart from line wire material were:

Upper Quadrant signals	36
Direct Current Track Relays	93
Relays	196
Primary Battery Cells	1570

(Summary is exclusive of requirements for Cootamundra and Junee Yards)

18 Cootamundra

The duplication of the Cootamundra - Junee Section was undertaken to increase the track capacity and accelerate traffic movements and in order to achieve these objectives, it became essential to provide additional station, traffic and locomotive facilities at both Cootamundra and Junee.

The double line terminated on the Sydney side of Cootamundra at North Junction, and, with the opening of the duplication to Junee, commenced again at the southern end of the Yard. The first requirement, therefore, was to complete the duplication through the Yard and secondly to provide additional traffic marshalling sidings with adequate facilities for the expeditious handling of locomotives.

A new main line was laid in, extended from North Junction to Cootamundra South. The old island platform was extended and relocated and served on one side by the Down Main Line and on the other by a Down Refuge Loop. The up platform was extended to 800 ft to accommodate, satisfactorily, long mail and express passenger trains.

Connections were provided at both the North and South ends to the Down Sidings which had to be moved over on account of the encroachment of the Down Refuge Loop, and the shunting neck was extended and alterations and additions made to the sorting sidings at the North end.

It follows that these additions entailed considerable alterations to the track layout and in order to meet, fully, the traffic demands in the marshalling and despatch of 1,000 ton loads intensive signalling became a matter of prime importance.

Automatic signalling had been in use for many years on the Wallendbeen - Cootamundra North Junction section, and, with similar working on the southern side, the correct procedure was to continue power signalling on the new double line through the Yard. The Main Lines, therefore, together with the Down Refuge Loop and No 1 Platform Road were fully track circuited and power signals provided for through main line movements. Both-way working, with full protection for opposing running moves, was provided on both the Down Main Line and No 1 Platform Road.

Under the old arrangements three signal boxes were required, viz. North Junction, Station Yard and South. With the introduction of power worked signals the opportunity presented itself of dispensing with North Junction Signal box and operating the connections by power, controlled by the new North Signal box at Temora Road crossing. As the Junction box was staffed continuously this effected a considerable saving.

Another advantage, accruing from automatic signalling, was the introduction of single line track block working between Cootamundra West and North Signal boxes via the South Fork. Due to the preponderance of engine moves from West to North, after reversal, balancing of Tablets under the old token system was a frequent necessity.

The yard itself is bounded north and south by two main roads, Temora Road on the north and Gundagai Road on the south, both roads carrying a fair amount of traffic. It became necessary, therefore, to provide full level crossing protection and to this end, the boxes were located adjacent to the respective highways. Power operated boom gates were installed together with wicket gates for pedestrian traffic.

These locations proved eminently suitable from a signalling point of view and all points came within range for mechanical operation with the exception of those at North Junction and the connections into the North Dock at No 1 Platform.

A difficultly, however, which was always present in the working between two boxes, relatively close together, is the large amount of overlapping signal controls - each box requiring to control signals departing from one interlocking and approaching the other.

In purely power worked areas this is overcome electrically without much complication, but in the case of mechanical signals, cumbersome dual control equipment is required. In order to avoid the disadvantages and difficulties associated with this equipment electric controls were provided on all mechanical levers operating signals which were controlled by both boxes. This compromise has proved entirely satisfactory and has enhanced the efficiency of the working within incurring the expense of full power operation.

Each signal box was equipped with a mechanical machine, 64 levers in North Box and 56 levers in South Box, and two miniature lever units.

All power worked signals and points were controlled by the miniature levers together with the 'overlapping' controls on the mechanical signals.

Power was taken from the town supply at 240 volts at both signal boxes and stepped down to 120 volts through 10 kVA transformers.

All track circuits were the AC - DC type with rectifiers and signal motors operated at 110 volts DC through suitable rectifiers whilst the points motors were standard 110 volt AC mechanisms.

19 Miscellaneous works

Apart from those already described, additional facilities on the Southern Line were only provided at scattered points. Principal among these were:

MOSS VALE Additional sidings.

GOULBURN Alterations to Goulburn North to facilitate moves to and from the Crookwell Branch, which was called upon to carry a large amount of ore traffic.

BREADALBANE Additional automatic signals and releases for a double ended siding between Breadalbane and Cullerin. This installation was carried out for the Australian Iron and Steel Co.

20 Telephone facilities

The telephone services on the Main Southern Line were extended by the provision of a carrier channel between Goulburn and June and additional trunk line facilities between June and Albury, the latter circuit being phantom over existing Circuits.

Metallic circuits, in addition to those existing, were erected between Sydney and Moss Vale and Goulburn and Harden.

(To be continued)

ANOTHER REGRETTABLE INCIDENT
SPENCER STREET, 1877

On 11 June 1877 a regrettable incident occurred at Spencer Street[1] when the arriving Williamstown suburban passenger train collided head on with the departing 4.30 pm Essendon train. The location of the collision was variously described as 'about 50 yards from the signal box on the Melbourne side' and the 'curve opposite Bourke-street west.' Fortunately, the drivers had realised the impending collision and reduced the speed of the two trains considerably before the actual collision. None-the-less, thirteen passengers were injured, some quite severely[2]. This accident appears to be significant in the history of signalling in Victoria as it appears to be the impetus for the appointment of a Signal Engineer.

At this time Spencer Street was completely un-interlocked. The points were worked by hand levers, although the levers appeared to be grouped together. The points and signals were worked by two signalmen stationed at No 1 Signal Box. The main line and the entrance to the Melbourne Goods Yard had been interlocked since 1876 when signal boxes were provided at Essendon Junction, North Melbourne, Dudley Street, and Inner Goods Junction. However, after these boxes were installed, McKenzie and Holland's representative returned to England and no further interlocking had been installed.

The Essendon train consisted of Engine No 22 hauling a van and four carriages[3], while the Williamstown train consisted of Engine No 26 hauling five carriages and a van. Both engines were 2-4-0 saddle tank engines built by George England & Co in 1861 and later known as the L class.

At the time of the departure of the Essendon train there was an 'unusual hurry and bustle' at the station, caused by a train from Sandhurst having just arrived (it was running 20 minutes late) and a train carrying Sir William Jervois and Lieutenant-Colonel Scratchley from Albury was expected to arrive any minute. Arrangements were consequently made to bring the Williamstown train in on a different line from that which it usually arrived. In doing so, it had to cross the path of the departing train to Essendon.

Thomas Halse, driver of the train to Essendon, stated that "on starting he gave the usual three whistles, and received the "all right" departure signal. There were only two signals used in the yard, namely "caution" and "danger." The signal given on the semaphore was "caution." This meant that he had to proceed slowly until he had passed the yard. He accordingly proceeded at about a rate of 10 miles an hour. When nearing the semaphore, he observed the Williamstown train coming across from the arrival line to the line upon which he was departing. He at once reversed his engine, and did all that was possible to avoid a collision, but failed, having too short a distance in which to pull up. He expected to see the Williamstown train pass into another vacant line. Just after the collision took place the signal on the semaphore was altered to "danger." As the engines met he jumped off, and received only a slight injury to his angle. His fireman and the guard of the train sustained rather severe injuries to their backs."

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[1] The actual name of the station is unclear in 1877; that it was colloquially known as 'Spencer-street' is clear from the newspaper reports. It occurred in what was later known as the Melbourne Passenger Yard.

[2] Unless otherwise noted this article is based on articles in The Age 12.6.77 p3, 13.6.77 p3, 15.6.77 p3 and The Argus 12.6.77 p7, 13.6.77 p6, 15.6.77 p6, and 16.6.77 p6

[3] The order of the consist is exactly as given in The Argus of 12 June 1877. It is likely that the van was, in fact, next to the engine as the Guard was injured. When the Jolimont accident occurred in August 1881 the van was definitely next to the engine. Note, that this style of operation meant that the passenger carriages were totally unbraked.

W. Burrows, driver of the train from Williamstown, reported that on approaching Melbourne yard, "he challenged the signalman, and he [the signalman] gave him the "all right" signal to cross from the up-line, when just as he was going over No. 4 road points he saw the Essendon train coming swinging along the same road. He immediately sounded his whistle, and used every effort to stop the train, and just as he was coming to a stand the two trains struck."

The Signalman[4] at No 1 box, Antonio Suares, initially reported that

I regret having to report that a collision took place between the up Williamstown and down Essendon train. I set my signals and points for the Williamstown train to go to the departure platform No 2 road, and also put my signals and points proper for the Essendon train to leave, but through some default [sic] of the No 4 points the Williamstown train took the wrong road. I beg to state that these points have not worked properly for some time, and that the working of any one pair of points slacks the levers of the others. And also, I can assert that if a stone or other substance was between the points, I could work the lever and not be aware of its being there. I very much regret the occurrence, but beg to assure you that it did not occur through any fault of mine.

However, Head Yardsman Sadlier[5], his superior, did not agree, as reported in The Argus of 13th: "In Mr Sadlier's opinion, the accident arose from 'the misplacing of the points from the cross-over to the departure line.' To effect the changes necessary at the time, three handles were required to be pulled, and if Mr Sadlier says, these were all pinned back, and they worked properly, the accident could not have occurred." Nonetheless, Sadlier, reported to the department that Suares and Thompson – the two men stationed at the signal-box near which the accident occurred – are "the two best men" in the employ of the signal branch, and he gives both of them a high character for sobriety, steadiness, and experience."

Thomas Higinbotham, the Engineer-in-Chief, and Commissioner John Woods[6], spent some time on the morning of the 14th inspecting the yard and the points.

At much the same time, Suares, withdrew his previous report and accepted responsibility for the accident:

I am very sorry in having to cancel my former report relative to the unfortunate collision on Monday last. I find, on reflection, that I did not hold the compound points. Therefore, sir, the mistake is mine, I am sorry to say, and I should not like any one else to be blamed when the blame is mine. Now, sir, after serving in the department for 18 years, holding responsible positions without anything previously taking place detrimental to my character, therefore I leave myself entirely in your hands, hoping that you will be merciful, as I have a wife and family depending on me for support. – I have the honour to be, your obedient servant, A Suares, No 1 Signal box.

In forwarding this memo to the Minister, the Traffic Manager, Anthony Matheson, added:

I attach a report just received from Signalman Suares, which sets at rest any doubt, and obviates the necessity for further inquiry as to the cause of the late collision. Signalman Suares was selected for No. 1 signal-box from his knowledge of the different roads and points, and of the shunting required in the Melbourne yard. Although the consequences of his omission in this instance are most disastrous, I would recommend his request to the favorable consideration of the Minister. There is nothing against Signalman Suares previously, and as he has always borne a good character for steadiness and. efficiency, I would .submit that a smart tine and loss of pay during suspension would meet the merits of the case.

Higinbotham also prepared a short report:

[…] I have inquired into the cause of the collision between the Essendon 'down' trains and the Williamstown 'up' train which took place on Tuesday evening, the 12th inst [sic]. There are but two possible causes for the collision, viz, first, that No 4 points were not working properly; and second, that the pointsman did not pull the lever of which works these points. The neglect to do this would bring the two trains into collision.

No 4 points were examined immediately after the collision occurred, and were found to work well. Nothing has been done to them since, and they are working well now. The fact that no part of the Williamstown train left the line is, to my mind, in itself sufficient proof that the points were not out of order.

There is, therefore, it appears to me, no other conclusion possible than that the collision occurred through the neglect of the pointsman on duty to pull over the lever which works No 4 points. I may add that Head-Yardsman Sadlier, under whose control the pointsmen are, agrees with me that the accident was caused by the pointsman's neglect.

The Minister ignored the recommendation for mercy and directed that all the papers in the case to be forwarded to the Crown Solicitor to see if Suares could be charged with negligence.

After these reports were digested, the Argus published the following editorial on 16 June 1877:

The serious and alarming accident that occurred on the Victorian railways on the 12th inst., in the Spencer-street yard, has been officially investigated, and with results that are to some extent reassuring. The causation of the disaster has been clearly traced, and the blame of it completely sheeted home to one individual. There was nothing amiss with the "points," through whose default [sic] the accident was at first supposed to have arisen. These were examined immediately after the collision, and were found to work well. Nothing has been done to them since, and they are working properly now. The fault lay entirely with the pointsman on duty at the time, who failed to pull over the lever which would have actuated the points and directed the departing Williamstown train into a safe course. That the operator, a steady and experienced man, officially represented to be one of the most trustworthy pointsmen in the department, should have committed such a blunder, is inexplicable except on the hypothesis that he had for the moment become confused or was extraordinarily forgetful; and such lapses on the part of capable men are not unprecedented, though happily very rare. The most expert whip has been known to pull the wrong rain in passing another driver, and thereby cause an accident; an experienced ship-captain will sometimes call out "starboard" when he means "port;" an engine-driver has been known to shut a valve when he

[4] Suares position is variously reported as 'signalman' and 'pointsman'. It is clear he worked at No 1 Signal box and set the routes for movements.

[5] Variously reported as 'Sadlier' and 'Sadler'.

[6] At this time, 'Commissioner' was the formal title of the Minister of Railways.

should have opened it - all of which go to prove that the human intellect is not always thoroughly in gear, and that all possible safeguards against the consequences of its failure should be brought into operation, particularly when a momentary aberration may lead to the sacrifice of human life, or the destruction of valuable property.

In all cases in which complicated mechanism or machinery, propelled by a very strong motive power, is employed, absolute immunity from danger is unattainable; there will always, do what we may, remain some residuum of risk. But experience proves that the risk may be confined within very narrow limits. In Great Britain alone, there is more hard work done by steam propelled machinery in one year than the whole manual labour of the world could perform in many years. The safety with which this immense amount of engine work is done depends on two things – the skill and carefulness of the hands employed in the first place; and, in the second, the excellence of the engines and machines. Neither could do much without the other. No perfection in the machines could compensate for lack of skill in the operators- by no exercise of the operator's abilities could defective machines be safely worked.

It is, therefore, the bounden duty of all who have the management of extensive operations in which machinery plays an important part, to bring together the two elements of safety which we have enumerated to the utmost extent practicable, and all the more when the well-being of the public as well as of their own employes is at stake. And, fortunately for travellers, apparatus has been invented which is inestimable value in its power of preventing railway accidents. Had this apparatus been in use when the Williamstown and Essendon trains were about to collide on the 12th, they would never have come into collision. The arriving train would simply have been stopped dead until the departing one had got clear away. We, of course, refer to the "interlocking" apparatus. Using this, the pointsman cannot make a mistake. Even if he is suddenly seized with homicidal dementia, and desires to precipitate a catastrophe, he is powerless to do any harm. If he drops dead at his post, the worst that will happen is that the whole business of the railway will suddenly come to a standstill, in which case the cause for the block will soon be discovered and removed. Under the "interlocking" system, the same act of the pointsman that renders the line unsafe to an approaching train also warns it of its danger. The two operations cannot be separated. There is thus a mechanical check put upon the vagaries of the pointsman, and an effectual safeguard provided against any sudden lapse of memory or judgement on his part. About a year ago several sets of Mackenzie and Holland's interlocking apparatus were erected on the Victorian Railways, just outside the Spencer-street yard, and no accident has happened since within the area in which they operate that any perfection of signal or point manipulation could possibly have prevented. In some instances, trains have been brought along in disregard of signalled warnings to the contrary, but of course no perfection in mechanical appliances can insure the safety of trains if engine drivers disobey their instructions. As has already been remarked, though mechanical safeguards are of the utmost possible value, they will fail unless aided by carefulness and intelligence on the part of the men with whom they are intended to co-operate for the advantage of the public.

The reason why the interlocking apparatus was not set up at the point at which the accident of the 12th originated, is intelligible enough, though hardly sufficient. When the apparatus was erected at several stations further out along the line, the question of the purchase of the Hobson's Bay and Suburban United Company's property was till in agitation, and since the Spencer-street yard would have had to be re-arranged in the event of the purchase being completed, it was considered inadvisable to incur any expense in improving it while its future remained doubtful. But there was not much force in this reasoning. The interlocking apparatus can be removed from one place to another at a trifling cost, and if a set had been erected at the spot in question, no re-modelling of the Spencer-street yard could have thrown it out of use, since it would have been required elsewhere, if not in that particular spot, and even the recent accident, not to speak of others which its erection there might have helped to prevent, will probably cost the country ten times as much as the apparatus would have done. It seems to use to have been a wasteful economy not to have erected some more sets of the interlocking apparatus when the department was about it, in which case the station where the recent accident happened would have been so furnished, and mishap prevented.

We observe that the signalman who caused the accident confesses his fault and solicits lenient treatment in consideration of his 18 years' service, and on the ground that he has a wife and family depending upon him for support. On this the traffic manager reports that he (the signalman) had always borne a good character for steadiness and efficiency, and suggests that "a smart fine and loss of pay during suspension would meet the requirements of the case." Of course, we have no desire to anticipate the decision of the Minister, or to advocate the infliction of excessive punishment for the blunder committed; but there are one or two things that should be borne in mind in dealing with the case. In the first place, the signalman misrepresented the condition of the points under his control, to screen himself, and in the second place he altered the semaphore so as to make it indicate "danger" after the accident had occurred. These are moral offences, and are quite as necessary to have due weight given them in awarding his penalty as the mental imbecility by which he was so strangely visited at the moment when the accident was maturing. Whether a man who has even once exhibited such imbecility should be again entrusted with duties which require, above all things, for their due performance, perfect coolness and presence of mind, is also a matter for grave consideration. Probably there are other positions in the Railway department for which the man is better suited than that of signalman.

And of the unfortunate Sauers? The Kyneton Observer of 23 June 1877 noted that the Attorney General had responded: "I have read the whole of the papers with the greatest care, and cannot see my way to advise a prosecution. There does not appear to me to be a remote chance of a conviction. On the evidence, I should say 'not guilty' of wilfully, maliciously, neglecting, or omitting to, &c" In view of this obstacle to the filing of a criminal prosecution, Mr Woods' immediately decided upon dismissing Sauers from the service, and a minute to that effect has been issued to the department.

It is notable that the Victorian government commenced in October 1877 to negotiate with Edward Philpott to return to Victoria as their Signal Engineer and extend interlocking and proper signalling. One of the first boxes to be commissioned was a new, interlocked, No 1 Signal box in September 1878.