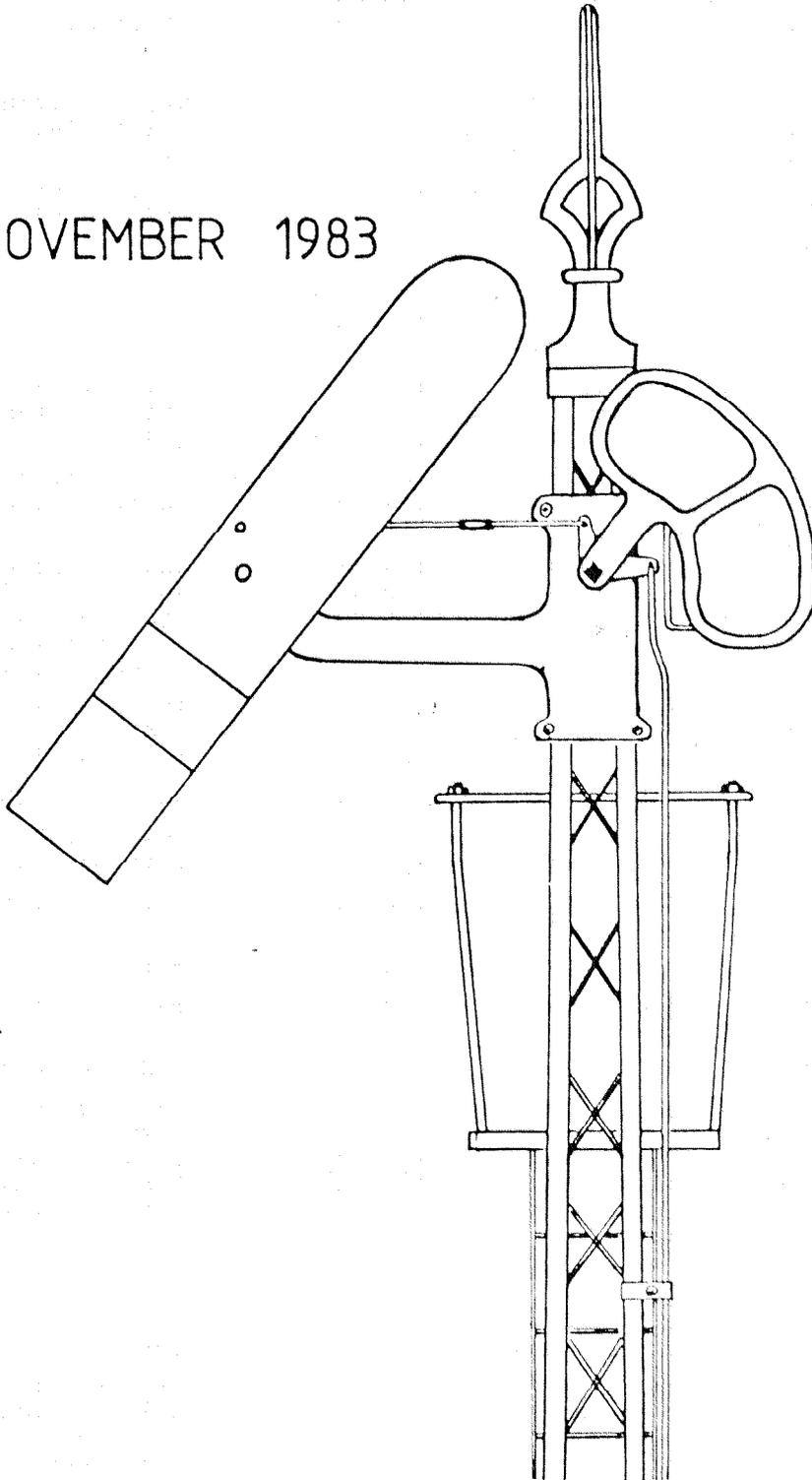


SOMIERSAULT

NOVEMBER 1983



SRSV

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Dead line for January 1984 issue is 4 December 1983.

NEXT MEETING: Friday, 18 November 1983.

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

MINUTES OF SEPTEMBER 1983 MEETING

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

MEETING COMMENCED: at 2015 hours.

PRESENT: J. McLean, J. Brough, J. McCallum, J. Sinnatt, J. Churchward, W. Brook, R. Jeffries, G. Price, R. Weiss, C. Rutledge, R. Whitehead, M. Drew, A. Jungwirth, G. Inglis.

MINUTES OF PREVIOUS MEETING: reading deferred until the next meeting. (Sinnatt/Brough)

CORRESPONDENCE: Inwards: from R. Weiss

Outwards: to G. Johnson, Tasmania.
to N. de Pomeroy, Sunshine.
to D. Harvey, Ballarat.

TREASURERS REPORT: \$20 room donation will be sent to the A.R.H.S. as soon as possible. Also, please send any subscriptions direct to Rob Weiss, 40 Shady Grove, Nunawading, 3130.

GENERAL BUSINESS: 1. Somerton: single line working recently observed included a set back move on the occupied line with track machines protected by only a red flag.

2. Jim Brough referred to an item from the NSW Digest where the SRA have a Driver and Secondman on the XPTs, the Driver is in the cab with the Secondman in the Guard's compartment. The Secondman performs the safeworking duties and Jim queried the integrity of this arrangement.

3. Murtoa-Horsham CTC: due to commence 15 November 1983. At Dimboola the existing signals will be decommissioned on 13 November and the new panel operating from 15 Nov.

4. Parwan Loop: due to be commissioned on 18 December.

5. Korong Vale: both boxes to be abolished on 1 December. Plunger locks and annett keys will rule, it seems!

6. Diagrams: New litho diagrams will be issued with the VLine logo in future - in three colours!

7. Sale: new station is due to be in service in November.

8. Springvale-Dandenong: scheduled for resignalling in mid 1984.

9. Darnum: disestablished on Tuesday, 13 September 1983.

MEETING CLOSED: at 2057 hours. Mike Drew then presented a very interesting talk plus slides of the Train Descriptor system installed for the Hong Kong Mass Transit Authority. All model railway fans drooled visibly at the sight of 'O' gauge trains and signals - run by the T.D.S. for training purposes.
Thanks Mike.

--oOo--

Alan Jungwirth's Question Time

Question for November: Where is there a co-acting dwarf signal?

Answer to July question: The first electric route indicator was installed at Richmond on the down home signal protecting the junction of the Burnley Local and Through lines. This signal only displayed a medium speed aspect.

SIGNALLING ALTERATIONS

- ✓ 1/6/1983 NYORA. The interlocking frame has been abolished. Signal posts Nos 1B, 2 and 3 together with the location boards have been removed. The connections to the former Wonthaggi line (closed on 21 November 1978) and the annett locked points at the up end of the yard were abolished. The main line points at each end of the yard remain plunger locked. A new up home signal was provided and the home signals (2 Down and 1 Up) are worked from quadrants on the platform or at the main line points.
- 1/6/1983 SOUTH DYNON. Flashing light signals were brought into use at the roadway crossing adjacent to "R" gate. The operation of the lights is manual with stop/start push buttons being provided.
- ✓ 5/6/1983 CROYDON. Signal post No 2 was moved three metres further out from the track and signal post No 4 was moved 20 metres in the up direction. These alterations are in connection with the duplication of the line between Ringwood and Croydon.
- ✓ 8/6/1983 COBURG. Boom barriers were provided at Munro Street level crossing at 9.876Km. The interlocked gates and pedestrian wicket gates were abolished. The boom barriers are manually operated using lever No 50, the former gate stop lever.
- ✓ 10/6/1983 VIOLET TOWN-BENALLA "A" BOX. "B" pattern miniature staff balancing magazines were provided for this section.
- ✓ 10/6/1983 YARROWEYAH. The up end staff locked points were abolished.
- ✓ 15/6/1983 DIMBOOLA. No 24 points were spiked normal and the Rainbow Dock taken out of use. No 61 and 62 points were spiked normal and the crossover between the main line and "W" was taken out of use. The leads across the Western Highway to the Oil Coy's siding were abolished and the tracks baulked. Siding "A" was extended in an up direction across the Western Highway to connect to Siding "B". Push buttons for the Western Highway boom barrier controls were relocated to suit the new arrangements. Disc signals worked by levers Nos 27, 40 and 51, and the semaphore arm worked by lever No 26 were abolished. Levers Nos 24, 26, 27, 40, 51, 61 and 62 were sleeved normal.
- ✓ 18/6/1983 PAISLEY-WERRIBEE. New signalling diagram No 11/83 issued diagram No 8/83 was cancelled. Boom barriers were provided at Kororoit Creek Road and Maidstone Street. Automatic signals G630 and GG630 were provided at Galvin to control movements across Maidstone Street. 5P key operated switches were provided at Galvin to control the signals to prevent unnecessary operation of the boom barriers.
- ✓ 20/6/1983 RAYWOOD. The up and down home signals and plunger locks were abolished. The main line points were provided with staff locks rodded to derails in the siding inlieu.
- ✓ 21/6/1983 WOOMELANG. Flashing light signals were provided at Sunraysia Highway level crossing at 387.645Km. An up home (light) signal was provided on the down side of the crossing.
(Tuesday)
- ✓ 22/6/1983 WOOMELANG. Flashing light signals were provided at Brook Street level crossing at 388.487Km. A down home (light) signal was provided on the up side of the level crossing. Both light signals protect the respective crossings to prevent unnecessary operation of the flashing lights during shunting movements.
(Wednesday)
- ✓ 22/6/1983 WELSHPOOL. The up and down home signals and plunger locks were abolished. The main line points were provided with staff locks and scotch blocks provided in No 2 road.
- ✓ 26/6/1983 CROYDON. Signal posts Nos 26 and 35 were moved three metres out from the track a/c duplication works. (These post numbers are incorrect but lever 35 works the down distant - post 1. No 26 is a lock bar but possibly the note refers to Posts Nos 1 & 3)
- 26/6/1983 NEWPORT-PAISLEY. Boom barriers were provided at Maddox Road.
- ✓ 28/6/1983 WINDSOR. The signal box and interlocked gates were abolished. Boom barriers were provided at Union Street level crossing and are automatic for up and down movements. A 5P key operated switch was provided to control Pl90 in the event of an up train being held in the platform.

- ✓ 29/6/1983 DONALD. Flashing light signals were provided at Sunraysia Highway level crossing on the lead to the G.E.B. siding. The lights are manually controlled by two 5P key operated switches.
- WN2/1983 (July) DUNOLLY-COPE COPE. New signalling diagram No 12/83 issued and diagram No 14/70 cancelled.
- 29/6/1983) ECHUCA-BARNES. Flashing light signals were provided at Francis Street level crossing at 235.471Km. The operation of the lights is automatic for up and down movements.
30/6/1983)
- ✓ 9/7/1983 PAISLEY-WERRIBEE. New signalling diagram No 13/83 issued and diagram No 11/83 cancelled. Provision of boom barriers at Hoppers Crossing together with new automatic signals G957 and GG957. Both signals controlled through 5P key operated switches so that the signal can be put to stop to prevent unnecessary operation if a down train be held in the platform.
- ✓ 10/7/1983 NEWFORT "A" BOX. A selection switch was provided in "A" Box to control the operation of the boom barriers at Kororoit Creek Rd for down trains on the West Line. The switch must be placed in the appropriate position prior to clearing the down home signal at Altona Junction for the train. The switch has three positions - Express, Stopping or Shunting, this latter position is for trains that are to shunt at Carbon Black siding.
- ✓ 13/7/1983 EPSOM-ECHUCA. New signalling diagram No 15/83 issued. The hand gates at Pakenham Street Echuca were abolished and flashing light signals installed in lieu. Two-position home signals on posts Nos 5 & 6 were replaced by light signals controlled from the signal control panel on the platform or 5P key operated switches at the crossing. Post 7, a two-position down starting (light) signal on the upside of Sturt Street level crossing and the down home (light) signal at the Murray River bridge was removed. The up home (light) signal at the Murray River bridge was renumbered No 8 and both these signals are also worked from the signal control panel at Echuca or from 5P key operated switches adjacent to "J" or "L" points.
- MOAMA. In conjunction with the issue of this diagram, the up and down home signals and plunger locks were abolished and the main line points were spiked normal.
- ✓ 13/7/1983 DIMBOOLA. New signalling diagram No 16/83 was issued and diagram No 16/80 was cancelled. Signal posts Nos 1 (down distant), 2 & 3 (down homes), 2B & 4B (dwarfs), 4 (disc) and right hand arm on post 7 were abolished. New three position down home (light) signal, post 2, was provided 400 metres in the rear of former Post 2 and a down repeating light signal, A3585, provided 2384 metres further out. A new up departure home (light) signal, post 4B, was provided from No 2A road to the main line. No 60 crossover between No 2 road and the main line was abolished together with No 59 catch points in the former connection to "W". Siding "B" now connects directly with siding "A" in lieu of "W" and a new motor-operated turnout between the main line and No 2A road provided. The following signals were removed - top & bottom RH discs on post 14, top & bottom RH discs on post 14B, two RH discs on post 10 and disc on post 11.
- ✓ 16/7/1983 FLINDERS STREET. Down home signal No 738 was relocated three metres in the down direction.
- ✓ 19/7/1983 ELAINE. Closed as a switching electric staff station. All signals and safeworking facilities were removed. The flashing light signals were modified for automatic operation in both directions.
- ✓ WN4/1983 (July) CRANBOURNE-KOOWEERUP. A new siding for Sperry-New Holland was brought into use at 46.933Km. The main line points are staff locked and the spur siding is facing for down trains. Electrical warning devices consisting of red and yellow flashing lights and sirens were provided at intervals along the siding to warn company employees when shunting is taking place. A switch for these devices is located on a pole near the access gate. Up to 12 vehicles may, subject to the regulations, be pushed between Cranbourne and the siding.

- ✓ 24/7/1983 FLINDERS STREET. Up home signal No 343 was relocated from a ground mast to the signal bridge at the same location. This signal controls movements to Nos 4 or 5 roads from "TT".
- ✓ 26/7/1983 SOUTH DYNON. No 76 dwarf signal was relocated about 30 metres in the down direction.
- 27/7/1983 MENTONE. Boom barriers have been provided at Warrigal Road. Pedestrian boom barriers were also provided.
- ✓ 1/8/1983 WHITE HILLS. The up and down end staff locked points were removed.
- ✓ 3/8/1983 BANDIANA. Flashing light signals were provided at Kiewa Valley Highway level crossing at 305.912Km. A new down home signal "A" worked from a quadrant lever at broad gauge points "B" was provided for down movements and a push button controls the lights for up movements. A notice board lettered "Trains must not pass this point until flashing lights are operating" was also added.
- ✓ 4/8/1983 ASPENDALE. Siding "A" has been baulked on the upside of Lochiel Avenue.
- 10/8/1983 EMU. Flashing light signals were provided at St. Arnaud Road level crossing at 235.510Km. Up trains may be held at the up home signal without activating the flashing lights.
- ✓ 12/8/1983 SOUTH DYNON. A broad/standard gauge grade crossing was provided with the broad gauge points and the standard catch points being worked from the existing three lever ground frame. Three dwarf (light) signals were provided to control movements across the grade crossing. This grade crossing is in connection with the standard gauge connection to the Fruit & Vegetable Market Siding.
- ✓ 14/8/1983 NORTH MELBOURNE. Up automatic signal No 550 was relocated 71 metres in the down direction.
- ✓ 17/8/1983 NORTH MELBOURNE. Up automatic signal No 508 was relocated 50 metres in the down direction.
- 21/8/1983 FLINDERS STREET. Down home signal No 590 was relocated 12 metres in the up direction. This signal controls down movements from No 5A road to "VV" and the Caulfield local lines.
- ✓ 28/8/1983 NORTH MELBOURNE-MACAULAY. New signalling diagram No 14/83 issued and diagram No 6/83 cancelled. Nos 426, 466 and 467 were brought into service together with the connections between the Upfield line and the East Suburban lines.
- ✓ 29/8/1983 (August) GHERINGHAP. Automatic staff exchanging apparatus have been provided for up and down trains. The exchange is effected on No 1 road and the apparatus is located as follows: DOWN - 52 metres from up end of platform and UP - 40 metres on upside of platform.
- 24/8/1983 BALLARAT CATTLE YARDS LINE. Flashing light signals were provided at Cuthbert Road level crossing at 125.589Km. Operation of the lights is automatic in both directions.
- 24/9/1983 MORDIALLOC. Boom barriers were provided at Station Street level crossing in lieu of interlocked gates. Trains may be held at F881 without activating the boom barrier cycle. Pedestrian boom barriers have also been provided.
- 31/8/1983 SOUTH GEEBONG. Flashing lights provided at Reserve Road level crossing at 80.526Km. Operation is automatic for all trains.
- ✓ 11/9/1983 (September) MORSHAM. A new siding to serve the Oil Companies depots has been provided leading off the lead to the Freight Centre. The points are fitted with a WSA lever and must be kept locked for the Freight Centre when no shunting is taking place to the oil sidg. When shunting is taking place, the points must be locked by means of the hand locking bar to lie for the oil siding due to the sharp alignment of curves either side of the points leading to the oil siding.
- ✓ 7/9/1983 EDITHVALE. Boom barriers have been provided at Lochiel Avenue level crossing. Trains may be held at F967 (lever 16 Aspendale) or F986 (lever 20 Aspendale) without activating the boom barrier cycle. F986 is also controlled by a 5P key operated switch on the up platform at Edithvale should an up train be held at the Edithvale platform.

- ✓ 13/9/1983 NHILL. No 32 points became annett locked, the key of which is kept in a duplicate lock on lever 22. No 31 plunger was abolished and the lever became a pilot lever. Disc 20 on post 5 was abolished and levers 20 and 32 were sleeved normal.
- 13/9/1983 BROOKLYN. Flashing light signals were provided at Somerville Road level crossing on the line to the rubbish tip. The operation of the lights manual by means of 5P key operated switch.
- ✓ 13/9/1983 DARNUM. Disestablished as a double line block post. The points have been spiked normal and the signals abolished. The signal posts will be removed later.
- 14/9/1983 CHELSEA. Boom barriers were provided at Swanpool Avenue. Pedestrian boom barriers were also provided.
- ✓ 16/9/1983 FRANKLIN STREET. No 42 home signal was relocated from a ground mast to an overhead mast.
- ✓ 18/9/1983 FLINDERS STREET. No 933 home signal was abolished. This signal formerly applied from No 9A East road to No 9A road.
- ✓ WN13/1983
September) NORTH GEELONG. The Geelong Grain handling loop is now in its final alignment and commencing forthwith is available for traffic.
- 21/9/1983 CLUNES. Flashing lights were provided at Learmonth Road at 156.362Km. Trains may be held at the up home signal without activating the flashing lights cycle.
- WN14/1983
(October) WAKOOL-MOULAMEIN-BALRANALD. Guard's of all trains will be in charge of safeworking at these stations. Prior to departing from any of these stations, the guard must telephone the SM Echuca the departure time of his train if travelling on the staff or if travelling on ticket, telephone the SM Echuca the ACRE message for the rear section. Each guard is to receive written instructions as to the signalling requirements for his train and he must sign a copy of the instructions held by the Depot Manager, Echuca.
- ✓ 28/9/1983 LITTLE RIVER, Switching facilities provided on the panel at Werribee to enable the Little River panel to be switched out. The CTC machine at Little River was replaced by a new machine when the duplication was completed to Lara hence this provision.
- 28/9/1983 LAVERTON, LARA & CORIO. Instructions regarding switching out the control panels altered to include instructions for drivers of trains that find the departure signals at stop to telephone Control for instructions. If the signal is at stop the train controller may verbally instruct the driver to pass the signal subject to the driver inspecting the points ahead of that signal to ensure that they are properly set for the passage of his train.
- ✓ 28/9/1983 TOOLAMBA. Nos 49 and 50 points, and disc signals on Posts Nos 9, 10 and 13 controlled by levers 35, 34 & 52 were abolished. It is believed that points No 43 leading to the RM dock, and discs 36, 37 on post 11 and disc 40 on post 12 were abolished at the same time although the Weekly Notice does not say.
- 28/9/1983 CARRUM. Boom barriers have been provided at Mascot Avenue. Pedestrian boom barriers were also provided.
- ✓ 5/10/1983 MORNINGTON. All signals and points have been abolished.
- 12/10/1983 PORTLAND. Flashing light signals have been provided at Gorae West Road at 396.743Km. Operation of the lights is automatic.
- WN17/1983
(October) WODONGA "A" BOX-COAL SIDINGS-BANDIANA-WODONGA LIVESTOCK SIDINGS. Instructions issued for the working of the new arrangements. The instruments at Coal Sidings and Bandiana are intermediate electric staff instruments and the instrument at Wodonga Livestock Siding is a large pattern arranged for automatic operation when Wodonga "A" requires a staff. The automatic operation also permits a staff to be withdrawn from the instrument at Coal Sidings or Bandiana without a signalman in attendance at Livestock Sidings. Details will be published later.
- ✓ 18/10/1983 TRARALGON. The annett locked points and rodded derail at the down end of No 2B road were abolished. No 47 points were also replaced by a catch point.

INTERLOCKING ON THE VICTORIAN RAILWAYS

by Colin Rutledge

Background

Some time ago the editor and I were talking about mechanical frames and our discussion got round to the how and why of design, different types of interlocking and different applications of the various types. Mr. Editor then informed me that I had volunteered to write an article for SOMERSAULT on the very subject that was under discussion. Being accustomed to people offering my services for me, I didn't think much about it. During the following days, the editor and I had many further talks on the subject and it soon became apparent that there was a large amount of material that would need to be covered.

The subject of interlocking will be covered over a number of issues and will be broken down into the following sub-groups: Annett's Locking, Staff and Tablet Locking, Plunger Locking, Rocker Interlocking Frames, Tappet Interlocking Frames (both direct and cam types), Electro-mechanical McKenzie & Holland Frames, Electro-mechanical GRS and VR combined frames, Electro-mechanical GRS frames, Relay Interlocking, and Geographical Relay Interlocking.

From the time of first railway in 1854, Victoria adopted English practice and ideas - locomotives and rolling stock were English, the permanent-way was the same as on English railways, and when Signalling & Interlocking came along, that too followed English practice until around the turn of the century when other influences started to show. The English Board of Trade, who were vested with the responsibility of keeping a watchful eye on the railways of the day, often commented about safety aspects upon the lines. In 1858 the Board said "It is most desirable that signals should be connected with points so as to be worked in conjunction with them."

Two years previously, Mr. Saxby (of Saxby & Farmer fame) invented a means of doing just that. He brought the signal and point levers together, and interlocked their operation so that it was not possible to manipulate a signal lever to clear a signal if the points were in the wrong position.

Although the merits of this interlocking of levers were so great, most railways were slow, some were most reluctant, to install this type of gear. In 1885, 36,635 places were deemed necessary to be interlocked yet 4,770 were not so fitted. Following the infamous Armagh accident of 1889, continuous brakes and interlocking were made compulsory by an Act of Parliament and railway company's were given two years in which to complete their installations.

Closer to home, and perhaps of more relevance, the Melbourne and Hobsons Bay United Railway Company "appear" to have led the way with the first interlocking in our state. A 16 lever frame manufactured by Saxby & Farmer was installed at Swan Street, Richmond, in 1873 and also included Victoria's first set of interlocked gates. At the time there were 240 train movements per day on the Port Melbourne, St Kilda, Brighton and Hawthorn lines and it was the company's intention to install further signal boxes. The Swan Street signal box (pictured in Windsor Publications - Steam Suburban) is generally accepted as the first frame installed in the colony. A photo published in VR to '62 (p77) shows the junction of lines at Footscray in about 1885. The striking feature of the photo is the tall wooden signal box supported on stilts. The type of construction suggests the same manufacture as the box at Swan Street.

Annett's patent form of Interlocking

One of the simplest forms of interlocking is the use of an Annett Key. Mr. J.P. Annett was at one time the Chief Signal Superintendent of the London and South Western Railway and his name is also linked with other patented ideas in the signalling field. I don't know just when he actually invented his key but I do know that the patent had expired by 1904.

The original use of "Annett's Key" was to control a ground frame or points some distance from the signal box. It is generally understood that the limit of effective operation of mechanical points is 300-350 yards from the signal box and Annett's Key was then used to overcome this problem for points located at a greater distance without the need for an additional signal box.

The Key is only available to unlock the ground frame when all applicable signals are at Stop and points involved are in the correct position. It goes without saying that the ground frame must be restored to normal before it is possible to reclaim the Key and return it to the signal box.

An Annett's Lock, when used to secure facing points, is bolted to a steel plate which in turn is fastened to two point timbers. The turning of the key projects a plunger of about 25 mm dia. almost right through the lock rod. The lock rod is fastened at the other end to the point blade. To remove the Key from the lock, the plunger must be projecting (i.e. locking) into the rod. As the Key is inserted and turned to withdraw the plunger, it becomes backlocked in the lock.

If the Annett's Lock is attached to a lever, a different shape lock is used. This particular style bolts onto the side of the cast iron catch box on the lever. The lock will fit any interlocked frame, small point lever, turn-table lever or ground frame of the new style. From the bottom of the lock, a plunger of rectangular section is driven by the key into notches cut into the floor plate or quadrant plate. Notches are cut by hand to suit each individual requirement.

A third type of mounting is found occasionally on interlocking frames where there is no lever available on which to fit the lock. A cast iron stand of about 150 mm in height bolts to the signal box floor and the lock fits onto the stand. The locking plunger is extended below the floor and connects directly to the interlocking. A handle is provided on the side of the plunger to assist in the moving of the mechanical linkages.

All other applications of Annett's Lock use either the first or second styles of lock suitably altered to suit the location.

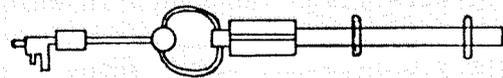
Because at some locations it is desired to have two or more Annett Keys in use and the incorrect key in the incorrect lock would defeat the interlocking, four different patterns of keys are used - "A", "B", "C" & "D". No key can work a lock of another pattern.

Camperdown is one location that I know of where all four pattern keys are in use whilst South Yarra had three for many years but recently one was withdrawn when the emergency crossover in the Caulfield Local lines was spiked normal.

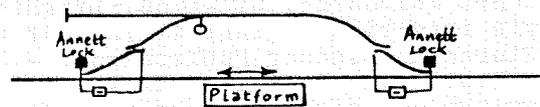
Different Applications of Annett's Key

1. Single Line Non-Crossing Stations

There has always been quite a number of these stations and some proof was required, before a train entered the section, that all the main line points at the non-crossing stations were set and locked for the main line. This was achieved by attaching an Annett's Lock to the points and the Key to the train staff for the section. The points could only be released by the Key therefore having it in ones possession guaranteed the points in the correct position. The Key was attached to the staff by a steel ring passing through both the Key and the staff. This application of Annett's Key was superseded by staff locking which does away with the need for a separate key. The 1953 General Appendix has a diagram (reproduced here) of a staff with Annett's Key attached. From available records it appears the first siding so equipped was Koo Wee Rup West (later Dalmore) on 27 September 1895 while the last were believed to be Youanmite and Yabba North equipped on 23 November 1909. Yabba South, similarly equipped in 1909, was closed in 1969 and the points were still annett locked according to the Weekly Notice so it is assumed that the other two stations lasted until all point locking was removed some years later although no dates can be found. (Perhaps a reader can help on this question-Ed)



Annett's Key on Train Staff.

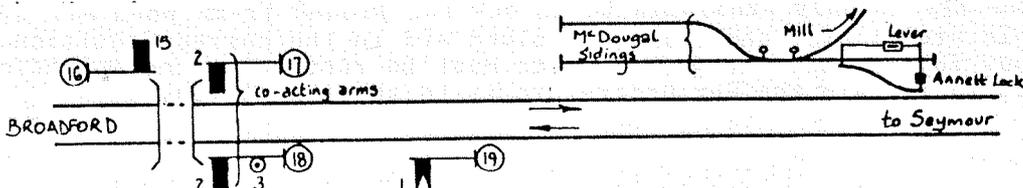


The 1953 General Appendix has a diagram (reproduced here) of a staff with Annett's Key attached. From available records it appears the first siding so equipped was Koo Wee Rup West (later Dalmore) on 27 September 1895 while the last were believed to be Youanmite and Yabba North equipped on 23 November 1909. Yabba South, similarly equipped in 1909, was closed in 1969 and the points were still annett locked according to the Weekly Notice so it is assumed that the other two stations lasted until all point locking was removed some years later although no dates can be found. (Perhaps a reader can help on this question-Ed)

2. Release of Points in a double line section beyond the starting signal

a. Broadford.

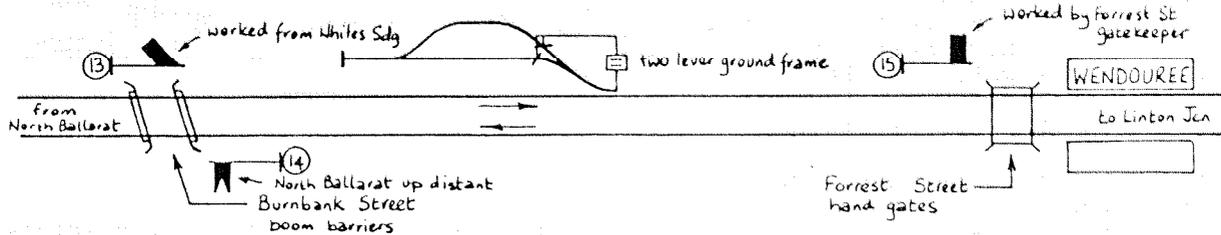
For the release of the points at McDougal siding in the down line between Broadford and Tallarook, Annett's Locks are fitted to the small point lever on the points and the down starting signal lever at Broadford. The date of the installation is 1 July 1895. A train shunting at McDougal takes the



Annett's Key from Broadford and proceeds to the siding after "Line Clear" has been granted by Tallarook in the normal way. Possession of the Key authorises the driver to pass the down starting signal at the Stop position. At McDougal Siding the Key is used as required to unlock the points for shunting and when shunting has been completed, the Key is returned to Broadford either by setting back under special instructions, or by a competent employee charged with the specific responsibility to return the Key should the train continue on its journey.

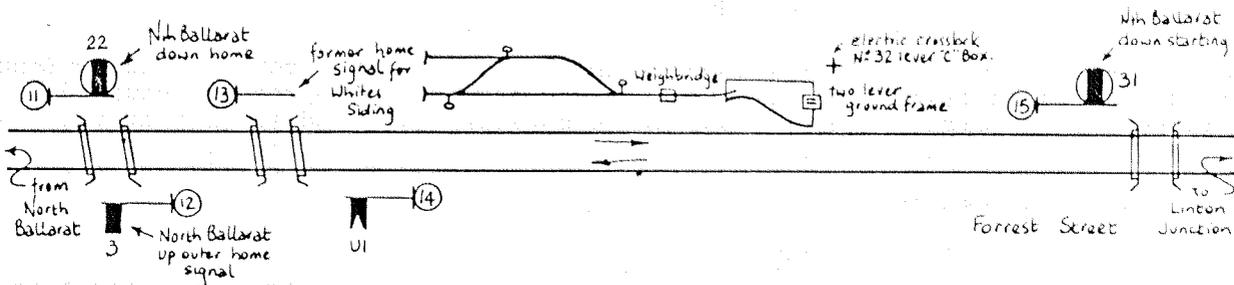
b. Whites Siding - North Ballarat.

The points at Whites Siding were controlled from a two lever ground frame, one lever worked the points and the other the down home signal protecting the siding. The lever of the signal was secured reverse (signal at proceed) when the Annett Key was removed. The Key, when not in use, hung on two nails on the wall of the signal box at North Ballarat Junction.



To work the siding, a passing train was handed the Annett Key which upon arrival at the siding was used to place the down home signal to Stop. The point lever was then free to be operated as required. Just before the train departed, the down home signal was placed to proceed and the Annett Key withdrawn from the Annett Lock on the lever. Normal interlocking existed between the two levers whereby the signal lever reverse locked the point lever normal. The train then continued to Linton Junction where the Annett Key surrendered to the signalman who returned it to North Ballarat Junction by the first available train. The siding is normally worked by a local shunting trip from Ballarat.

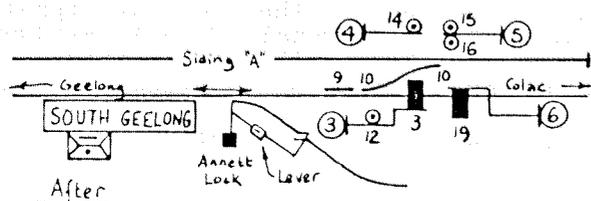
Recent alterations at the siding have modified the working in that the Annett Key is now kept in an Electrically Crosslocked Annett Lock located near the points. The crosslock is released by the operation of lever 32 at North Ballarat Junction. The two lever ground frame was relocated and the signal became a pilot lever released by the Annett Key as before. Interlocking between the ground frame and the signals was now done in the frame at North Ballarat Junction signalbox.



3. As a cheap and simple interlocking within a station yard.

a. South Geelong

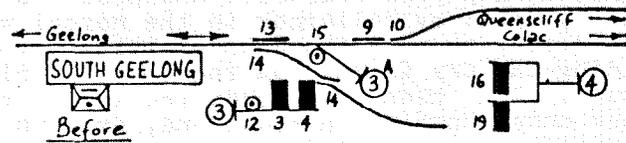
The access to the goods yard at South Geelong is straight off the main line at the down end of the platform. The points are operated from a small



point lever and an Annett Lock secures the points directly. The Key is normally kept in a duplicate lock on lever 13 in the signal box. To release the Key, lever 13 is reversed and this locks nails 2, 16 & 19 at Stop protecting the shunting move. The Annett Key is now available to unlock the yard points as required for shunting. After shunting

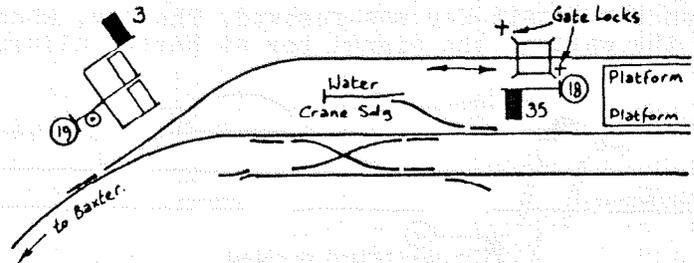
is completed, the Key is reclaimed and restored to the interlocking frame to release the signals for normal working. Prior to the alterations in 1982 these points were worked from the interlocking frame but were converted to Annett Locks during the alterations and remained Annett Locked for economy.

The accompanying diagram shows the arrangements prior to the provision of Annett Locking. The siding serves a briquette storage area but was used for the reversing of passenger trains prior to the completion of siding "A". The original point lever, No 14, has been used for a new disc from Siding "A" and thus we can see that no additional levers were added although there are spaces in the frame.



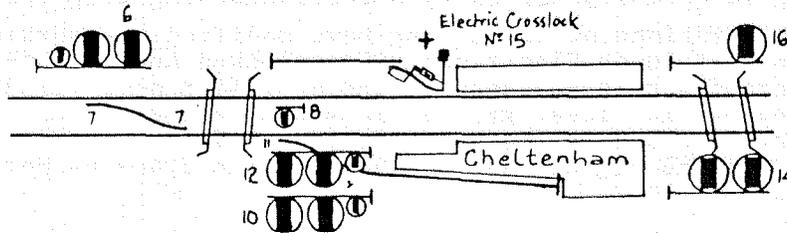
b. Frankston

The back platform road (No 1) at Frankston is normally used only by terminating suburban trains and not by through trains. The station approach road crosses this line and the level crossing is provided with hand gates. The gates have Annett Locks fitted to them in such a way that when they are closed to road traffic, the Annett Keys chained to the gates can be fitted into Annett Locks on the gate posts. When the Keys are turned another pattern Annett Key is released and this is then taken to the signal box and inserted into a duplicate Annett Lock on lever 38. This lever reversed frees the interlocking on signals 3 or 35 applying through the gates. A similar situation occurs at Lilydale even though that yard is not interlocked anymore.



c. Cheltenham

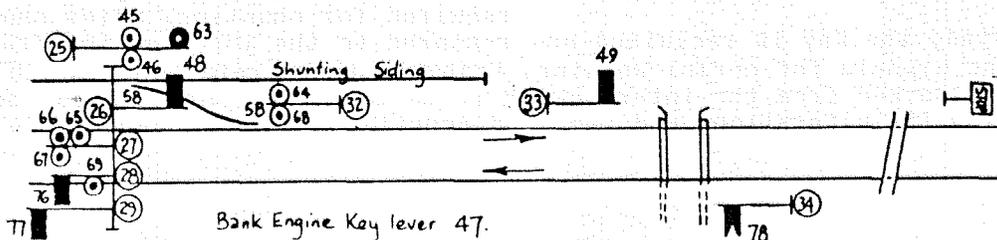
At locations where three position signalling is in use there is often not a lever available on which to put an Annett Lock. A thumb switch panel, such as at Cheltenham, is an example. In this case an electrically released



Annett Key is provided. The Key is kept in a modified lever mounting Annett Lock working in conjunction with an electric lever lock. When the key is required to be released, the signal man operates the crosslock lever and the key is released electrically by the electric lock energising. Contacts fitted inside the electric crosslock box are broken and down home signal No 6 is held at Stop for moves along the down main line.

4. Bank Engine Key

It was once a very common practice to assist heavy trains in the rear on certain steep banks. The usual arrangement was for the assisting engines to push in the rear as far as a Stop Board located just over the top of the grade. The bank engine would then return to the station in the rear. On single lines the means of protecting this movement is by using a Bank Engine Key which when removed from its lock breaks the electric staff line wires preventing any further bell signals from being sent until it was returned. This method would not work on double lines as we would want to use the block instruments to signal trains on the other line. Instead a system is used whereby the starting signal at the station in the rear is locked at Stop by the withdrawal of an Annett Key from the interlocking frame or pilot lever, Seymour "B" still retains this facility. An Annett Key engraved "Bank Engine Key Seymour "B" to Mileage 64-40" is provided and is kept in an annett lock on pilot lever No 47. Before 1961 when the present frame was provided, the Annett Lock was mounted directly to the interlocking frame.

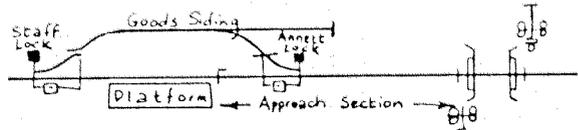


For a train to be banked in the rear, the signals leading to the down line - disc 46 or arm 48 - must be placed to Stop after the train engine has passed. The pilot lever is then reversed and the Annett Key withdrawn. The key is handed to the driver of the bank engine as it passes the signal box.

This authorises the bank engine to push the train to the Stop Board and then return «WRONG LINE» to signal post No 32. The key is returned to the signalman as the engine is admitted to the yard and replaced in the lock on lever 47. Lever 47 is now placed back in the frame and normal working can be resumed.

5. Control of Flashing Lights in Single Line Sections

The last 20 years have seen a large increase in the number of level crossings protected by flashing lights or boom barriers. At locations on single lines where a shunting train would cause unnecessary operation of the lights, a means of preventing this unnecessary operation is used. When a shunting train stops on the approach to a level crossing, the flashing lights will be operating but by placing the staff into the staff portion of a Staff/Annett Key Exchanger and operating the interlocking rod, the flashing lights will be switched off. Operation of the interlocking rod will also free an Annett Key which when removed back locks the staff in the exchanger. The key is now used to unlock the points as they are fitted with an Annett Lock. Push buttons are normally provided for manual control of the flashing lights if necessary. Restoration of the apparatus is done at the last moment before the train departs as once the staff has been reclaimed, the flashing lights will operate again.



6. Lifting Bridges.

a. Tocumwal

The road/rail lifting bridge at Tocumwal utilises Annett's Key as part of the interlocking, no fixed signals being provided. To unlock and lift the bridge, a staff is first obtained from the instrument at Tocumwal. Should the staff instrument be out of order the bridge cannot be lifted.

The staff obtained is taken to the bridge and used to unlock a staff lock which then enables the bridge lock lever to be operated, backlocking the staff in the staff lock. Operating the lever withdraws the plunger securing the down end of the bridge. An Annett Key is now also free and is removed from its lock. The Key is taken to the up end of the bridge and is used to release the bridge securing plunger at that end, the bridge is now unlocked and can be raised for river traffic. The reverse procedure applies after the bridge has been lowered for rail traffic.

b. Murrabit

When the safeworking system is not electric staff a different arrangement of interlocking is used. The bridge by which the Stony Crossing line crossed the Murray River was an example although now is a road only bridge following the lines closure in 1961. It appears, however, that no trains operated after 1943 beyond Murrabit.

Up and Down home signals were provided and the levers for both signals were secured at Stop by Annett Locks. The Annett Key itself was kept in a box in a cabin at the bridge. To raise the bridge, the Annett Key after being obtained from the box was used to unlock a lever which withdrew the plungers securing the bridge. The Annett Key was backlocked until the bridge was lowered again and locked. The Annett Key could then be withdrawn and if not required to unlock a signal lever was returned to the box in the cabin.

7. Emergency Crossovers

At both South Yarra and Footscray emergency crossovers are provided. These crossovers are trailing for normal moves. The single operating lever is secured by an Annett Lock and the Annett Key is normally kept in a lock which is connected to a circuit controller. Turning the Key to withdraw it opens the contacts in the circuit controller and this puts to Stop the Up and Down automatic signals protecting the crossovers. At South Yarra two automatics in each direction are put to Stop but at Footscray two home signals protect the crossover. Restoration of the Key to the Annett Lock will again allow the signals to resume the proceed indications. The Annett Keys at South Yarra are mounted in a glass fronted box, to gain access to the Key the glass must be broken.

A PROBLEM AT BENALLA

by Stephen McLean

The new country timetable introduced in 1981 featured shorter stops at major stations. On the Albury line, Seymour, Benalla and Wangaratta all had the stops cut to two minutes. In the revised timetables of 1982, Saturday and Sunday trains had the Benalla stop extended to four minutes to allow the two signal boxes to be operated by one man.

There is no reason for down trains at Benalla requiring four minutes and this is a mistake which should not have been made. At Stawell, the two signalboxes are worked by one man at times and trains are not delayed, however, at Benalla, the combination of signalling arrangements and rules does cause up trains to take four minutes when both boxes are worked by the same man.

The boom barriers at the up end of Benalla are worked from a lever in "A" Box and not automatically by the passage of trains. In order that road traffic is not delayed more than necessary, the signalman must be at "A" Box for up trains, however, he cannot clear the signals at "B" Box well in advance of the arrival of the train, then walk to "A" Box. As the train is to run via the platform road (not the straight road) and cannot be given the distant signal: Regulation 63 states that where a distant signal is not operated for a train, the home signal must not be cleared until the train has passed the distant signal. Therefore the signalman must wait at "B" Box until the up train has passed the distant, then pull off the home signal, then walk to "A" Box and operate the boom barriers and signals for the departure of the train. While he is walking from one box to the other, the train is in the platform for four minutes.

No problem would exist if it were not for regulation 63. The regulation is sometimes disregarded and trains can be handled much faster; at other stations on the line it is common enough for signalmen to pull off well before the arrival of a stopping train, even though it is not in accordance with the regulations. Drivers complain if the home signal into the platform road is pulled off at the last minute and it is estimated that the regulation, if carried out, causes the running time of stopping trains to be extended by about five minutes (plus the extra two minutes for up trains standing at Benalla).

What is the purpose of regulation 63? A senior railwayman states that it dates from the days before track-locking. When a driver who didn't get the distant but did get the home could not be sure that the home signal was for his train (it could have been left off after the previous train) unless he saw it pulled off in front of him. These days with track-locked stations the rule would seem archaic, and it does cause delays.

Is there anything that can be done at Benalla to avoid the two minute delay to up trains? Here are eight suggestions:

1. Provide an exception to regulation 63 and allow the signalman to pull off the up home before the train has passed the distant. This could extend to all track-locked stations but this introduces an inconsistency - why not abolish the rule altogether?
2. Provide an electric motor on the up home signal so that the lever in "B" Box can be operated long before the arrival of the train but the signal does not clear until the train occupies the track circuit inside the up distant signal. This would require an indicator in "A" Box so the signalman could be sure that the signal had operated.
3. Provide an electric motor on the up home signal so that its lever in "B" Box can be operated but the signal won't clear until a lever in "A" Box is operated after the train has passed the up distant signal. A track circuit indicator would need to be provided to let the signalman know when the train has passed the distant.
4. Provide a splitting distant on the up, allowing both home signal and lower distant signal to be operated before the arrival of the train. There is a case to be made out for having splitting distants at all other north-east stations, so that all stopping trains could be speeded up.
5. Convert the up distant to a repeating signal (without a lever) and using two working heads so that a medium speed indication could be shown for the platform road.

6. Make the up distant automatic so that the up home signal can be pulled off whether the distant is going to come off or not. (Does regulation 63 apply for down trains coming off the Geelong line at Warrenheip, where the distant is never operated because it has no lever?)

7. Make the boom barriers automatic allowing the signalman to work up trains through at "B" Box.

8. Abolish the up distant signal, or replace it with a location board or home signal. (Clunes, an interlocked yard according to the Book of Signals, has a down outer home signal in lieu of a distant. How does regulation 63 apply here?) This is my favourite solution as it shows how inconsistent the rules are. If Benalla doesn't have an up distant, he can pull his home signal off when he likes. Because he does have an up distant signal (which is never operated for passenger trains and therefore need not be there) he is forced to check trains and on weekends to delay them by two minutes.

What ever happens, eight suggestions provide a wide range of options and it is hoped that the next country timetable sees all trains at Benalla back to two minute stops.

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Interlocking on the Victorian Railways (cont. from P71)

8. Nothing to do with Signalling

The goods shed road at Bunyip is provided with a crane for unloading wagons. The siding is electrified and to ensure that the overhead power is off before the crane can be used, an Annett Lock is provided on the crane mechanism. The Key is normally kept in a duplicate lock fitted to the handle of the overhead isolating switch and cannot be released until the overhead power has been switched off.

9. Over the Border

In New South Wales where extensive use is made of the Annett Key, particularly for ground frame releases, Annett Locks are still used to secure points on single lines. The Annett Lock is similar to the type we use on a signal box floor. The lock straddles the rodding between the point lever and the points, and inserts its plunger into that rod. This is called a Bracket Lock.

The more usual application of Annett Locks is to release a two lever ground frame, where the Annett Lock is mounted on the Facing Point Lock lever. When the Key has been inserted and turned, the lever is free to be operated and in turn releasing the Point lever. The Key to release the F.P.L. lever is a key end manufactured on the end of the Ordinary Train Staff, Electric Staff or Miniature Electric Staff.

Within station limits at staff stations, these ground frames are released by a Key normally kept in a Annett Lock on a lever in the interlocking frame. Sometimes up to three keys are kept on a lever by means of Duplex or Triplex Locks.

(to be continued)

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The Centenary of G.K.Winter's Block Instruments in Victoria.

by Graeme Reynolds.

In the Minutes of the July meeting of the Signalling Record Society (Victoria), the proposed celebration of the centenary of Winter's lock between Flinders Street, Princes Bridge and Baluclava was mentioned. The date was stated to be 'aprox. 13 August 1983'. It is opportune to consider which event such a centenary marks.

C.D.Gavan Duffy in Bulletin (1961) had asserted that the block had been 'introduced and enforced' on 15 October 1883. There could be some doubt about the meaning of such a statement. It suggests that the date marked the official enforcement and regular use of the block on the above lines of railway. It may also imply that prior to that date the Victorian Railways had applied Winter's block working on irregular schedules, such as could be consistent with an installation and training programme while traffic continued to operate.

Somersault (March 1980) Vol 3, No 2 reported that,

'the generally accepted date (so far anyway) is 3 October 1883, and if anyone agrees with Alan's suggestion that it is earlier, we would be pleased to hear details'

The recent minute has nominated a period which is about six weeks earlier than had been cited. The Argus (9 October 1883) mentioned that,

The Railway Department has completed the trials and experiments which have been proceeding during the last few months in connection with the block systemit has been decided to introduce the system on Monday next, the 15th instant....

That statement is not inconsistent with either of the above dates. However, it seems unlikely that the Victorian Railways would have officially introduced the block to regular traffic without the development of even a limited staff training programme. On that basis the press statement tends to give more support to a date which is earlier than 3 October 1883.

Now that the dates for the probable centenary of Winter's block being installed, tested and officially introduced have passed, perhaps Somersault could take the opportunity to present the evidence to support the earliest date, 13 August 1883, so that its credentials as the occasion to be celebrated in connection with Winter's block can be established.

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