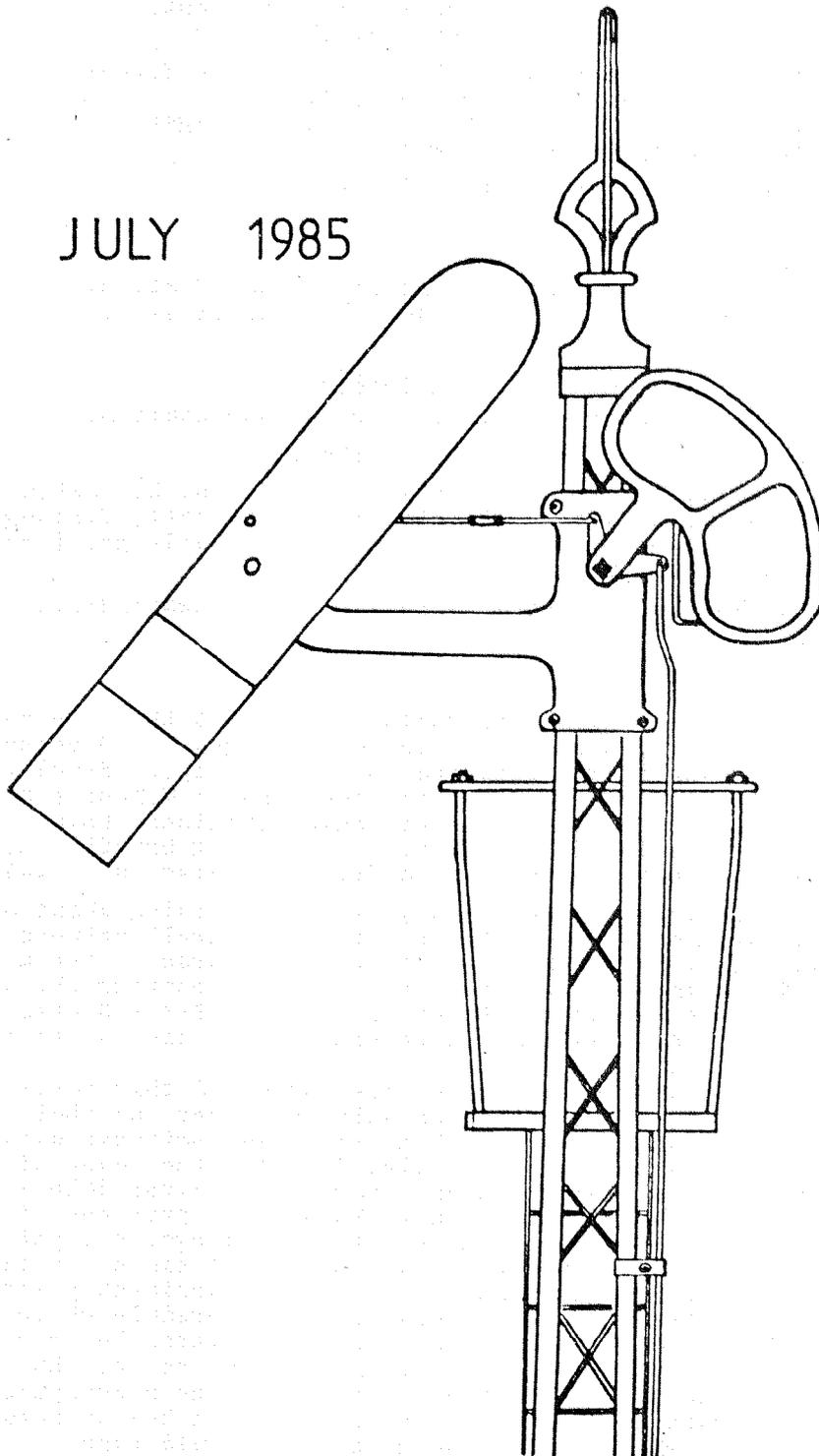


SOMERSAULT

JULY 1985



SRSV

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New South Wales Group Leader: Neil Curryer,

NEXT MEETING: Friday, 19 July 1985.

VENUE: A.R.H.S. Library Room, Windsor Railway Station.
 Dead line for September 1985 issue is 18 August 1985.

MINUTES OF MAY 1985 MEETING

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

COMMENCED: at 2000 hours, Friday 17 May 1985.

PRESENT: J. McLean, R. Weiss, T. Deveney, R. Jeffries, R. Crosby, F. Atwell, R. Lambert, R. Whitehead, J. Sinnatt, J. Brough, J. Churchward, A. McKenna, D. Langley, C. Rutledge, (and Miss J. Langley).

MINUTES OF PREVIOUS MEETING: were adopted as read. (Churchward/Brough)

BUSINESS ARISING: nil

CORRESPONDENCE: nil

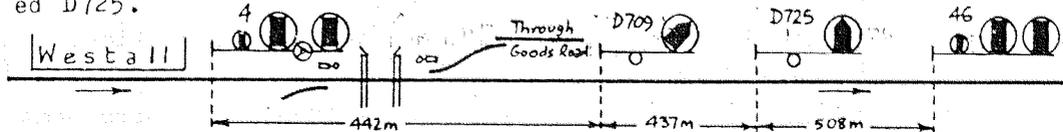
GENERAL BUSINESS:

1. The recent visit to Ballarat (in fact the same day as the S.R.S.V. meeting) by Colin Rutledge, Tom Deveney and David Langley was reported on and the report developed into a discussion of various modifications to McKenzie and Holland's cam and rocker interlocking machines. (Elsewhere in this issue is a short article explaining briefly the differences between the various rocker frames in Vic.-Ed)
2. Jack McLean asked if anyone knew anything about or had pictures of the weighted points at Hartwell between 19 and 1934. Unfortunately, other grey beards at the meeting did not know the whereabouts of such a photograph. Jack also asked about the Lever Locking and Track Control (LLTC) between Camberwell and Riversdale being controlled by only one lever. John Sinnatt and Roger Jeffries answered this question and pointed out that there was only one lever and that it was at Camberwell, and when Camberwell was switched out, the section worked automatically. This was the cause of the "head on collision" which occurred near Riversdale around 1954 when the duplication works were in progress. Riversdale at that time had no points or sidings, and yet was an LLTC post for Camberwell, and a staff & ticket station for Hartwell. The signalman at Camberwell accidentally let a ballast train leave Camberwell for Riversdale while the Alamein local train was approaching Riversdale from Hartwell with the staff. The trains were no nearer than the down home signal and the platform but the newspapers blew it up rather remarkably. The local train had to return to Hartwell where the following ballast could pass.
3. For the time being, the executive has given away the idea of having a speaker on the LIC system. The next meeting we hope to hear John Sinnatt speak on level crossing protection, and some time in the future we hope to see the Smith venture in South America.

ENTERTAINMENT: We were grateful to Jon Churchward for his 25 slides he presented in the form of a guessing competition. Old blokes like Jack McLean did very well with 22 out of 25, but then he remembers the Boer War. Actually Jack was surprised that

SIGNALLING ALTERATIONS

- ✓ 1-2-1981 DENNINGTON. The flashing lights at Drummond Street level crossing have been converted to manual operation. A notice board lettered "Trains must not enter the roadway until flashing lights and bells are operating" has been erected on either side of the crossing.
- ✓ 4-2-1985 LILYDALE. The connection from No 1 road to Coldstream was removed and the Coldstream line is now connected to No 3 road at the down end. The staff locked turnout and rodded catch at the down end (the former connection between the Coldstream line and No 3 road) was removed. The up arrival home signal was moved 175 metres further out and is worked from a quadrant lever situated adjacent to the hand points between Nos 3 & 4 roads. The up distant signal was moved 345 metres further out.
- ✓ 6-2-1985 STAWELL. The up home signal, Post 4, was moved 20 metres further out.
- ✓ 15-2-1985 LAVERTON. The signal control panel was renewed insitu.
- ✓ 23-2-1985 WESTALL-SPRINGVALE. A new down automatic signal D709 was provided 442 metres on the down side of signal No 4. Down automatic signal D727 was moved 92 metres in the up direction and renumbered D725.

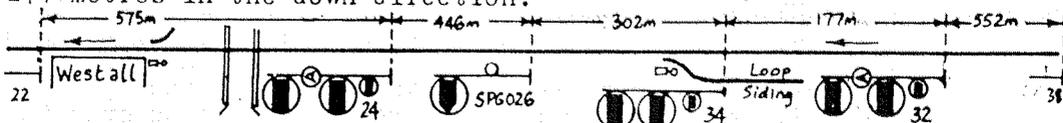


- ✓ 2-3-1985 PAISLEY-WERRIBEE. Signalling diagram No 37/84 was issued and diagram No 13/83 cancelled. The new line from Westona was connected to the East line at the up end of Laverton station and a new down home signal No LAV12 was provided for moves along the East line in the down direction and protects the new junction. Down automatic signal G673 was converted to a controlled automatic and renumbered LAV10. The low speed aspects on up departure signals LAV4 and IAV16 apply only towards up departure home signal LAV34. A letter type route indicator was provided on signal LAV16 - W West line, E East line and A Altona line. A 65Kph speed indicator light was provided on signals LAV4 and LAV8.

- ✓ 6-3-1985 BEAUFORT. Flashing light signals were brought into operation at Racecourse Road level crossing on the upside of Beaufort station. A new up departure light home signal, Post 1B, was provided and prevents unnecessary operation of the lights during shunting operations. For trains shunting at the up end staff locked points, a shortened approach circuit is provided. Signalling diagram No 19/72 Beaufort has been cancelled and the portion of diagram No 6/84 for Beaufort is now in service. (Note: Diagram No 6/84 covers Windermere to Buangor

- ✓ 23/3/1985 NEWPORT-NORTH WILLIAMSTOWN-ALTONA JUNCTION. Signalling diagram No 9/85 was issued and diagram No 45/84, together with that portion of diagram No 43/84 (Altona Junction-Westona) on the up side of signal No 214 were cancelled. The holding loop at Altona Junction on the Altona line was extended and associated signalling brought into service.

- ✓ 23/3/1985 WESTALL-SPRINGVALE. Westall Road level crossing was relocated 107 metres in the down direction which avoids the very sharp curves the busy road previously made. Post 24 was moved 107 metres in the down direction and controlled automatic signal D714 was moved 101 metres in the down direction and renumbered SPG026. Post 32 moved 174 metres in the down direction.



- ✓ 4-4-1985 SOUTH DYNON. Dwarf signal No 212 was moved 6 metres in the down direction and placed on the right hand side of the track, and dwarf signal No 218 was moved 17 metres in the up direction.
- ✓ 4-4-1985 RINGWOOD. A co-acting signal was provided for Up Home signal post No 58. The co-acting signal is placed on the right hand side of the line.
- ✓ 11-4-1985 ALTONA JUNCTION-WESTONA-LAVERTON. Signalling diagram No 17/85 was issued and diagram No 43/84 was cancelled. Crossing loops were provided at Westona (right hand running) and Laverton (left hand running) on the new line. The crossing loop at Westona is worked from a local panel at Westona and that at Laverton from the panel there. The Automatic and Track Control system is in use between Altona Junction and Westona, and between Westona and Laverton. The staff and ticket system (although no tickets were used) between Altona and Westona was abolished, and the home signals at Altona similarly were abolished. The notice board at the up end of Westona station regarding a 30 kph speed limit to Grieve Parade was removed, boom barriers were provided at that level crossing. Boom barriers were also provided at Maidstone Street, Westona. The instructions relating to the issuing of caution orders as published in WN 10/82 and circular A 2157/82 were cancelled.
- ✓ 13-4-1985 MORIAC. Moriac was disestablished as a staff station. All points, signals, plunger locks, quadrants and staff instruments were abolished. (Station now closed to all traffic? - effectively only a switching crossing loop since 12-12-1978). The permanent electric staff section is now the former long section between South Geelong and Winchelsea.
- ✓ 13-4-1985 KANIVA. The switch lock at the up end of Kaniva was moved five metres in the up direction. (Point renewals?)
- WN 16/1985 TRAIN TO BASE RADIO. Commencing forthwith, in the event of a failure of the telephone communication, the Train Controller may transmit to the Driver of a train, a Caution Order or a Message Form. Details elsewhere in this issue.
- ✓ 18-4-1985 GOORNONG. The up and down home signals were abolished. The plunger locks on the main line points were provided with staff locks rodded to derails in the siding.
- ✓ 20-4-1985 FLINDERS STREET. Signalling diagram No 21/85 was issued and diagram No 46/83 was cancelled. The up and down Caulfield Local lines adjacent to the Northern Underground Loop Tunnel Entrance were realigned to their former positions and a connection was provided from the local lines to the Caulfield sidings.
- ✓ 24-4-1985 FLINDERS STREET-RICHMOND. Up automatic signal No 865 on the Up Sandringham line between Richmond and Flinders Street was relocated to a ground mast until further notice after the overhead stanchion on which the signal was mounted was destroyed by a derailment.
- ✓ 10-5-1985 DEEP LEAD LOOP-MURTOA. Signalling diagram No 2/85 was issued and diagrams No 36/84 (Deep Lead Loop) and 38/84 (Lubeck Loop-Murtoa) were cancelled. The automatic and track control system was brought into use between Deep Lead Loop and Lubeck Loop replacing the electric staff system. Various former two-position light signals were converted to three-position signals and repeating signals - A 2775 and A 2590, were converted to three position automatic signals with the same numbers. The staff locked points at Glenorchy became switch locked in lieu. It is believed that the signal control panel is still being used at Lubeck Loop although the diagram does not show it.
- ✓ 11-5-1985 GLENORCHY. Flashing light signals were provided at Callawadda Road on the up side of Glenorchy station. For shunting movements, up automatic signal No 262/24 may be placed to the stop position by the operation of a 5P key operated switch at the up end switch-lock cabin. If the shunting movement requires to pass over the level crossing, the signal will assume the proceed position after 12 sec. of flashing light operation upon the operation of the 5P key switch. The flashing light signals may also be operated by the start/stop 5P key switch also located at the up end switch lock cabin. At the same time, the PCR crossing at 261.524km (the former crossing at the up end of Glenorchy) was closed.

- 13-5-1985 MAROONA. The points at the up end of the platform from No 1 to No 2 road, and the down end points from No 1 road to the Portland line were abolished. The down inner home signal remains.
- 16-5-1985 MELBOURNE YARD. A new dwarf signal, No 50, was installed on the Hump governing all movements from the Trimmer Locomotive Road.
- WN 20/1985 STAVELY. No 2 road has been removed.
- 20-5-1985 DETONATOR BOARDS. A trial use of detonator boards has commenced on the Frankston line. The boards are triangular in shape with a large reflectorised letter "D" in blue thereon. The board will be placed on the left hand side of the track and about 30 metres on the approach side of the detonators. The board indicates to the driver that detonators are on the track but are not to be used as a substitute for a flagman.
- 23-5-1985 SOUTH DYNON. Dwarf No 188 was relocated 126 metres in the down direction and on the right hand side of the track. (Dwarf 188 is at Reversing Loop Junction on the Engine Roads and applies along the Up Engine Road to West Tower or Spencer St via the flyover.)
- 25-5-1985 SOUTH KENSINGTON. Dual gauge home signal No 166 and dual gauge dwarf signal No 114 were abolished. Broad gauge points Nos 167 and 111, and standard gauge points Nos 163 and 115 were spiked normal and will be removed at a later date. (These signals and points are located at the former electronic weighbridge at South Dynon Jcn.)
- 26-5-1985 GISBORNE. The up home signal Post 4 was moved 40 metres in the down direction and the up starting signal Post 3 was moved 40 metres in the up direction.
- 2-6-1985 CAULFIELD. Signalling diagram No 33/85 was issued and diagram No 32/79 was cancelled. Sidings "C", "D", "E" and "S&C" siding were abolished and dwarf signals No U29, 64, 65, 66, 74, 75, 76 and 77 were removed. Levers No 47, 65, 66, 68, 70, 71, 72, 76 and 77 were sleeved normal. Lever No 64 (previously to Siding "B" or "C") now operates as a pilot lever for moves along Siding "B".
- WN 23/1985 STRATFORD JUNCTION. Commencing forthwith and until further notice the signalman at Stratford Junction may withdraw a staff for the section Maffra-Stratford Junction in accordance with Rule 18 of the Electric Staff rules and supplementary instructions contained in the General Appendix. (These rules and instructions relate to the release of a staff for station work and probably has been done in order that trains may be crossed at Stratford Junction, the train waiting there able to occupy the Maffra branch legally.-Ed.)
- WN 23/1985 MORWELL-TRARALGON. Commencing forthwith, the intermediate electric staff instrument at Maryvale may be used when trains are to be locked away at the following sidings:
- a) Hazelwood Siding
 - b) Shire of Morwell Siding
 - c) Latrobe Valley Key Freight Gate Siding

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From the Weekly Notice

W.N. 34. Week Ending Monday, 18 February 1901.

MATHIESON'S SIDING. Engineer's diagram No 110/01, showing Lines of Way, Interlocked Points and Signals will be brought into use on Friday, 15th inst. Until further notice, the above siding is switched in as a Block Post between the hours of 7.30 am and 5.30 pm daily, Sundays excepted. The 1.5 signal is strictly prohibited for all trains, and, except for ballast trains terminating at Mathieson's Siding, this post will only act as a repeating station between Wandong and Kilmore East. Wages and expenses of man in charge to be debited against the Existing Lines Branch. As there is a falling grade of 1 in 80 at this station, Regulation 213 must be strictly complied with.

- Semaphore Post No 1 Down Distant signal.
- 2 Top arm, Down Home signal.
Bottom arm, Up Starting signal.
- 3 Top arm, Up Home signal.
Bottom arm, Down Starting signal.
- 4 Up Distant signal.

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STAFF (AND TICKET?) WORKING IN BELGIAN CONGO

in about 1947

by Jack McLean

If you look up Kivu in your atlas, you will find that it is the name of a lake on the eastern edge of Zaire, which used to be called Belgian Congo. If your atlas is old enough, say should it be dated 1950, you might even find a railway called the Chemin de fer du Kivu, running between Kalunda on the north end of Lake Tanganyika and Kamaniola on the south end of Lake Kivu, a distance of about 80 kilometres.

When I wrote to this railway in 1951, they sent me a copy of their Circular No 1, regarding the running of trains on the single line. The circular has been missing for many years but my translation of it, made long before I had shares in the French Department of the Seymour High School, recently turned up and, I think, makes interesting reading.

It is dated 20 September 1947 and is addressed to all Stationmasters, and is along these lines:

INSTRUCTIONS CONCERNING THE RUNNING OF TRAINS

The running on the line between two telephone posts is made under the principle of the absolute block system.

This means that no train or vehicle whatsoever may run without being the carrier of the pilot staff relating to the section nor without the train or vehicle being authorised to run by "announcement" from siding to siding.

PILOT STAFF. A pilot staff is allocated to each of the sections between two crossing stations. Each staff is of a special form for each section.

In normal running, a train must not leave nor pass a crossing station without the pilot staff being shown or delivered.

The staff must be simply shown when a train leaving a station will be followed by another train. It must be taken from station to station up to the meeting point with another train running in the opposite direction.

The note (avec baton - with staff) or SB (sans baton - without staff) must be written on the train movement order.

The engine drivers must not take away the pilot staff beyond the station at which it should be delivered and will be punished for doing so. The Stationmaster on duty alone is allowed to receive or deliver the pilot staff.

DEPARTURE ORDER. Before giving the departure signal to a train, the Stationmaster must take the following action:

1. Request from (control?) authority to despatch the train.
2. Ensure that the section to be traversed is free. To this effect, the following messages are exchanged with the station towards which the train is directed:
 - a) Train No x in my station. Is Line Clear?
 - b) If the line is clear and there is nothing to prevent its despatch into the section towards that station, the reply is "Line is Clear for Train No x".
 - c) If for any reason (derailment, lack of room) the train cannot be received safely, the reply will be "Line Occupied, Train cannot be received".
3. Deliver or show staff for section to be traversed.
4. Withdraw the moveable red signals placed on the line and order the pointsman to give a green signal at the exit from station.

The guard will ensure that the brakemen are at their places and that the regulation signals are correctly shown by the station personnel.

If as a result of a train running late or preference being given to a train, the meeting point is changed and the staff is consequently misplaced, the following measures will be taken for the train to run without the pilot staff towards the new meeting point. The Stationmaster at Kalundu takes the responsibility of "Control" and ensures that the following is observed.

Before the arrival of the train, the Stationmaster will carry out all the preliminary formalities such as:

- a) Request from "Control" authority to send the train towards the pilot staff.
- b) If "Control" agrees, call the station to which the train is directed and request them there to send the pilot staff 500 metres out towards the station sending the train.
- c) The station receiving the train, after sending the staff out 500 metres, will advise the sending station and the two Stationmasters will inscribe in their train register the time that the staff was sent out.
- d) The Stationmaster will invite the guard to bring his Departure Order to the office. The SM puts the guard au fait (in touch) with the situation.
 1. Displacement of the staff
 2. Line Clear obtained from receiving station.
 3. Authority from "Control" to send train forward.
 4. Pilot staff sent out towards his train.

The Guard is then connected with "Control" and will request his confirmation for the sending on of his train.

Confirmation being given, the Movement Order is immediately drawn up and signed by the Stationmaster and Guard.

The Stationmaster at the new meeting point which has been fixed in consultation with "Control" and the Stationmaster with the train, sends a pointsman to a point 500 metres from the station with a red signal and with the staff. He advises "Control" and the adjacent station of the time of departure of the pointsman with the staff. The pointsman shows the red signal to the train, delivers the staff to the driver and the train continues, approaching the station cautiously.

No train running "anti-staff" can be made without the intervention of the European stationmaster in Kalundu.

This extraordinary running is to be noted in the Train Register, on the Guards Movement Order and also on the train graph.

If the telephone fails, the drivers must be doubly careful and not exceed a speed of 10kph. In this case, Stationmasters must inform engine drivers of the special precautions they must take for safeworking and (in this case) the running will be exclusively regulated by the staff. Trains must not run during telephone failure at night unless the engines are provided with regulation lights.

RUNNING OF LORRIES-INSTRUCTIONS TO PLATE LAYERS. For running outside the staff regulations, a lorry or a platelayers vehicle or a relief engine must:

1. Carry a red signal visible at a distance front and rear.
2. Be preceded at 200 metres in the direction of running and not overtake, the carrier of a red flag.
3. As far as possible, use a portable telephone to advise where it is stopped and to be informed of the position of trains. The telephone is the responsibility of the accompanying European.

4. Motor trolleys are similar to trains and the Guards of them must observe the instructions in this circular.

A work supervisor, if stopping between two stations for work, will clear the line by sending the trolley to the nearest station. The recalling of the trolley will be made by telephone to "Control". If it is restored at the approach of a train or if it may be followed by a train, it must be covered by the regulations. He must make use of his portable telephone to learn the position of trains every time he resumes running after a stop.

REGULATION FORMS OF STAFFS. Only one staff exists for each section and are in the forms shown for the sections:

Kalundu - Uvira

Uvira - Kavimvira

Kavimvira - Kiliba

Kiliba - Sanghe

Sanghe - Lubirizi

Lubirizi - Luvunghi

Luvunghi - Kamaniola

IRREGULARITIES IN THE RUNNING OF TRAINS. All irregularities in the running of trains in connection with these rules must be notified to the European Stationmaster (Head of Zone) at Kalundu and to the Controller of Movement and Traffic.

Important Note: The European Stationmaster (Head of Zone) alone may take the exceptional measures relative to the running of trains outside the above regulations.

It is important then that everyone conforms strictly with these instructions and ensures that they are known to appropriate natives.

A copy of this stencil is being sent today to each native employee concerned with the running of trains.

SPECIMEN DEPARTURE ORDER

Order to Depart towards the Staff

From To on (this date)
at (this time).

To the driver of train No by Guard

After agreement with the Chief of Zone at Kalundu and entered in the Train Register at the station by the undersigned.

Signature of Stationmaster.

Signature of Guard.

NOTE: The guard must himself telephone to Control before delivering the order to advance. The Order to Depart itself must be sent to the Head of Zone at Kalundu to be attached to the train graph.

The British have never used Line Clear Reports and it seems that this form is peculiarly Australian. However, the methods of working trains when the staff is at the wrong end vary considerably and depend a little on the quality of the signalmen. Here in Belgian Congo in 1947, native labour was probably cheap and easy to come by. One cannot imagine the Stationmaster at Ouyen sending a porter with the train staff 500 metres towards Walpeup to wait an hour for an up goods train. On the other hand the British are horrified at the idea of a Line Clear Report.

Who said Rule Books were of no great interest?

BRIEF NOTES ON
McKENZIE & HOLLAND ROCKER INTERLOCKING FRAMES

by Colin Rutledge

As the result of extensive research, I am in a position to conclude, with little doubt, the following information regarding the differences between the various McKenzie & Holland rocker interlocking frames.

No. 5 PATTERN. (example in Sydney Science Museum but with No 6 pattern locks.)

The frame has levers at 5" pitch, cam and soldier locking, cam shaft to the rear, lock shaft to the front of the frame, rocker shafts for mounting of soldiers in various size brackets fitting in two levels to the rear of the frame. Levers stand vertical for Normal. Curved floor plates are fitted and signal levers pull to three notches to allow for signal wire expansion. Points and lock bar levers pull to 1st notch only. Cam stud is fitted in a projection to the rear of the lever by a 5/8" stud. The catch rod is forged with no length adjustment. Catch box appears to be wrought iron folded to shape, the lever and cam clips are also wrought iron. Main "A" frames have a very pronounced curve between the floor plate bearer mounting and lock/cam shaft bearings which are integral in the "A" frame casting. The mounting point for the top shaft bracket is about 1" proud of bottom mounting point. The shaft brackets for the top & bottom shafts are different due to the 1" difference between mounting points. Top shaft brackets do not incorporate a No 1 position whereas the bottom brackets do.

No. 5A PATTERN.

Same as the No 5 pattern except that the catch rod is adjustable and the catch box is cast iron not wrought iron. It is also possible that cast iron lever and cam clips are used.

An example of a 5A pattern is South End signal-box at Spencer Street station in Melbourne, except that the levers have been redrilled to change the cams and cam studs to No 6 pattern type.

No. 6 PATTERN.

Flemington Racecourse signal-box is an example of a No 6 pattern and there are a few others still in service in Victoria. These frames appear to be similar to No 5 pattern except that the cam stud is in the centre of the lever and so a different cam is used. "A" frames have mountings for the top and bottom rocker shaft brackets in line, both brackets are the same. No 1 hole in top brackets cannot be used. The curves in the "A" frames between floor plate and cam/lock shaft bearings is less pronounced.

No. 6A PATTERN.

Most rocker frames in Victoria are of this pattern and they are the same as the No 6 pattern except that the cam stud is held on the lever by two 2 1/2" bolts.

It has been suggested that a No 8 apparatus was a 6" pitch cam and soldier interlocking frame. Victoria had one such frame at Waubra Junction which I think was identical to a No 6A pattern except for the pitch.

There is a small number of cam and soldier ground frames and although I am not 100% certain, the first was probably installed subsequent to the first No 6A pattern frame. This means that a No 7 pattern may be a self contained or ground frame apparatus.

I have identified four catch handle styles, one of which is believed to be the VR's own version. The others I can not yet associate to a particular frame pattern.

On frames fitted with gate wheels it has been noted that the centres of the wheel lever to the gate stops lever can be 6" or 7", with no obvious reason for the variation.

A number of frames were installed (none surviving) that had No 5 pattern frames with No 6 pattern levers, and in one case, a frame which the sketch says had some levers (a minority) of No 5 pattern in an otherwise No 6 pattern frame.

(continued on Page 64.)

MAN UPSTAIRS PLOTS TRAINS' PROGRESS

569 Miles of Railway controlled from Geelong
(Reprinted from The Geelong Advertiser, 13 May 1950)

Lounging in your train seat while the lush landscape of the Western District rolls by, it is more probable that you have never given a thought to that vast army of railway men on whose experience and efficiency the smoothness and safety of the journey depends.

One of the important links in that chain is the railway Control section. Well behind the scenes, these are the men who plot the progress of all trains moving within their section and see that they reach their destinations not only safely, but also as near as possible on time.

The Geelong Control Room, on the second storey of the Geelong railway buildings, controls the movements of all trains operating in the South-Western railway district. That district extends as far west at Port Fairy and Hamilton; north to Ballarat and Ararat; and south to Queenscliff. In that area about 569 miles of railway are controlled through about 80 control points, with an average of about 14 trains under control in the area at various periods.

In charge of the Geelong Control section is the Senior Train Controller (Mr. S. H. Wishart), who has four train controllers under his direction. They are Messrs. P. Legg, G. Fitch, H. Forster and T. Slattery.

The Train Controller on duty sits at a sloping table on which, among other things, are three large blue-lined graph sheets. There are separate sheets for the Geelong-Port Fairy, Geelong-Ballarat and Geelong-Ararat lines. Each sheet is ruled with closely inter-spaced lines intersecting at right angles. The vertical lines represent the time graph. The horizontal lines provide for the journey mileages. Darker blue lines on the graphs give the plotted routes of the respective trains when running on time.

Also at the Train Controller's elbow is another large record sheet. On this are recorded the daily reports from stations of trucks on hand - loaded and empty - trucks despatched, the number of trucks which it is estimated will be available for despatch next day and so on.

Throughout the day and night a stream of information is pouring into the Geelong Control Room. This includes arrival and departure times of trains, engine numbers, passengers joining and alighting, train crews, trucks shunted and in the case of goods trains, the loads carried. When a passenger or goods train clears a station in the district, the Station Master informs Control. He gives times of arrival and departure of passenger trains and, in the case of goods trains, quite a lot of additional information on time taken to shunt, details of trucks on and off, tonnage, etc. The Controller records this information in its appropriate place. As each successive station on a line checks in with this information, the Controller plots the trains progress by means of pencil lines on the graph in front of him. He can thus see at a glance where every train is at a given time in his district; what loads they are carrying; how much additional loading each can pick up to make up its capacity load; how they are running for time and how the engine crews stand for relief.

In front of the Controller as he sits at his table is a complicated looking switchboard fitted with loud speaker and microphone. On the switchboard panel are rows of switches, each with a name beneath. This is the intricate Selectophone system which permits the Controller immediately to get in touch with any main line station simply by manipulating the appropriate switch. Branch line stations are controlled through the stationmasters at the junction station.

The Train Controller has to watch that the load capacity of trains is not exceeded, but, at the same time, he has to ensure that there are no unnecessary holdups of trains. He also has to regulate the hours of duty of engine crews who come under his control on leaving the depot by providing for their relief at change-over points. There are pitfalls even in the selection of stations for crossing points. Some stations have limited siding accommodation and it is the Train Controllers duty to ensure that a train to be crossed there does not consist of more vehicles than the siding can accommodate.

The switch which operates the microphone on the control panel is foot operated. That permits the Controller to have both hands free for the manipulation of his charts.

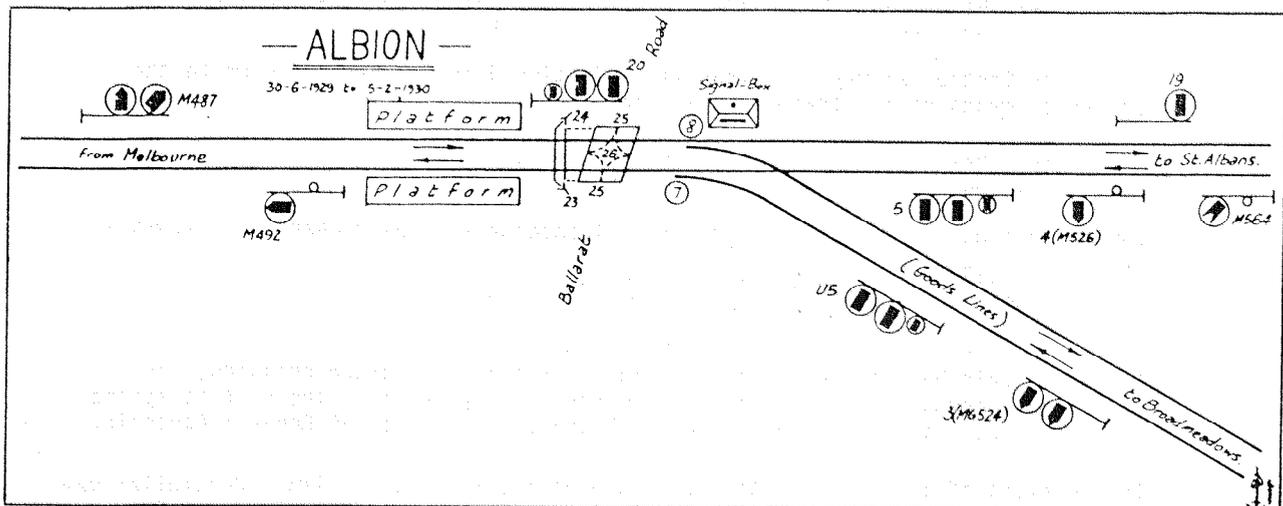
To the uninitiated, the speed with which the men at the Control board handle the volume of information at peak periods is most bewildering. But it seems to come like second nature to the seasoned railwayman, for the conversations are in the vernacular peculiar to the railway system. Trains are identified by numbers. For instance, Control wants information on the running of the 3.15pm passenger train from Port Fairy, the last report of which was from Terang. So he twists a switch on the control panel and when Camperdown answers, he asks for information on the "Ninety". The 10am goods train from Warrnambool is the "Eighty"; the 9.35am passenger train from Geelong to the Western District is the "Thirty-five" and the 10am goods from Colac is the "Fifty".

The Geelong Control system is one unit of the State's rail control system which operates in six divisions. Naturally, the Melbourne division is by far the largest. It controls 800 miles of line and 440 control points from five panels. These are Melbourne to Geelong and Melbourne to Seymour; Melbourne to Ballarat and Melbourne to Bendigo; Eastern and South-eastern Districts; and the Metropolitan and suburban, which is divided into two sections during peak periods. The divisional headquarters are at Melbourne, Geelong, Seymour, Ararat, Ballarat and Bendigo. All country trains are in charge of Melbourne Control until they reach the divisional headquarters. They then pass under divisional Control.

In addition to Geelong Control, the South-Western railway district, which comes under the supervision of the District Superintendent (Mr. A. C. Brown) at the Geelong divisional headquarters, includes also the control centre at Ararat. This centre handles the traffic as far west as Serviceton.

This brief glimpse behind the railway scene is sufficient to show the important role of Train Control in the railway system. As summarised in the departmental "News Letter", its objectives are: To move traffic from point to point as quickly as possible at the time required; to obtain the maximum amount of work from the locomotive power available; to prevent congestion and standing time of trains by regulating the streams of traffic, and to make arrangements for the distribution of trucks and the clearance of loading.

---000---



The diagram of Albion depicts a very short stage in the history of signalling at this station. Up until April 1927, Albion was just two side platforms with no interest in the safeworking of the line. Block instruments were provided in that year enabling the station (non-interlocked) to switch in as required to permit plant trains access to the construction siding, the points of which were annett locked. This siding eventually became part of the goods lines to Broadmeadows. An interlocked signalbox was provided at Albion in 1928 and on 30 June 1929 the goods lines were opened to traffic. Three position signals replaced the double line block from Sunshine and were also installed on the goods lines. The block to St Albans succumbed to three position signals on 5 February 1930. Our diagram depicts the period from 30/6 until 5/2.

ACKNOWLEDGE
A.411/85

STATE TRANSPORT AUTHORITY
VICTORIA

ACKNOWLEDGE
A.411/85

STATIONS:-

South Dynon Loco Depot, Melbourne
Yard, Seymour, Benalla, Wodonga
Loco Depot, Ballarat, Ararat,
Dimboola Loco Depot, Melbourne to
Albury, Melbourne to Wolseley. H.122

Office of Safeworking Department,
Room G.19 'Phone 1665
19th April, 1985

CENTRALISED TRAFFIC CONTROL SYSTEM

TRAIN TO BASE RADIO

Commencing forthwith, Caution Orders, TR 13C for Home Departure Signals and Message Forms for Home Arrival Signals may be transmitted by the Train Controller to the Driver by means of the "Train to Base Radio" in accordance with the following instructions.

When a train is detained at a Home Arrival or Departure Signal, the Driver may use the Train to Base Radio to communicate with the Train Controller.

Should it be necessary for the Train Controller to issue the Driver with a Caution Order TR 13C for the Home Departure Signal or the Message Form for the Home Arrival Signal, the Driver must go to the telephone cabin to complete the Caution Order or Message Form as dictated by the Train Controller.

In the event of a failure of the telephone communication with the Train Controller, the Driver must:-

1. Obtain a Caution Order, or Message form from the cabin,
2. Ensure that the points are properly set for the train to pass,
3. Return to locomotive and advise the Train Controller by the Train to Base Radio that the telephone has failed.

The Train Controller may then transmit a Caution Order or Message Form to the Driver by means of the Train to Base Radio.

The Driver must copy the Caution Order or Message form on the prescribed form, and repeat the particulars back to the Train Controller.

Before passing the Signal, the Driver must endorse the speed chart as follows:-

TR 13C or Message Form,
Number of Signal,
Signature

Should a train be detained at a Home Signal protecting a grade crossing, the Driver must communicate with the Train Controller by means of the post telephone and obtain permission as prescribed in clause 18 (a), page 186 General Appendix.

In the event of a failure of the telephone at the signal, the Train Controller may authorise the Driver to pass the signal at stop, by means of the Train to Base Radio as prescribed in clause 18, page 186 General Appendix.

Before passing the signal, the Driver must endorse the speed chart as follows:-

Verbal Instruction
Number of Signal
Signature

Add references to clause 5 page 184 and to clauses 18 and 19 page 186 General

Single Line Block Working

by David Donald

(Reprinted from Blocking Back)

As with double line working, it is necessary to ensure that a specific period of time or interval exists between trains running in the same direction on single lines and yet there is the added problem that opposing traffic must not be allowed into the same section. In Australia, three main safeworking systems are used on single lines, a) Ordinary Train Staff & Ticket, b) Electric Train Staff (and its variants), and c) Train Order working. Under ETS, the block or space interval is maintained by the very nature of the system itself, except where Divisible (or Composite) ETS is in operation, and that will receive mention later in this article. However, the other two systems, again by their nature, need to have special regulations to achieve this spacing. It is to be the purpose of this article to briefly look at the different methods of spacing trains on single lines, as they relate to these systems.

New South Wales

We, in NSW, use a system of time interval working as the basis for spacing trains on lines worked by Ordinary Train Staff & Ticket (OTS&T), we have no Train Order working in this state. This form of working allows a second train to enter a section in the same direction as a preceding train after an interval of time, as specified in the various working timetables, has elapsed. The following table has been taken from the Northern WTT, dated 22 April 1979 and is typical of that applicable to all divisions.

Interval between trains following each other in ordinary train staff and ticket sections - continued

1. The intervals between trains, unless otherwise specified, are as follows:-

Description of train	Interval		
	Daylight	Dark	
Main Line and Branch Lines on which Main Line Speed is run			
Passenger following	Non-stopping Passenger	15	30
	Stopping Passenger	30	30
	Non-stopping Freight or Mixed	1	1
	Stopping Freight or Mixed	1	1
Non-stopping Freight or Mixed following	Non-stopping Passenger	10	20
	Stopping Passenger	10	20
	Non-stopping Freight or Mixed	20	30
	Stopping Freight or Mixed	30	60
Stopping Mixed following	Non-stopping Passenger	10	20
	Stopping Passenger	10	20
	Non-stopping Mixed	10	20
	Stopping Freight or Mixed	20	30
Stopping Freight following	Non-stopping Passenger	10	20
	Stopping Passenger	10	20
	Non-stopping Freight or Mixed	15	30
	Stopping Freight or Mixed	30	60
Light Pioneer Branch Lines on which Main Line Speed is not run			
Passenger following	Non-stopping Passenger	15	30
	Stopping Passenger	30	30
	Non-stopping Freight or Mixed	30	30
	Stopping Freight or Mixed	1	1
Non-stopping Freight or Mixed following	Non-stopping Passenger	10	20
	Stopping Passenger	15	30
	Non-stopping Freight or Mixed	15	30
	Stopping Freight or Mixed	20	30
Stopping Mixed following	Non-stopping Passenger	15	30
	Stopping Passenger	15	30
	Non-stopping Freight	20	30
	Stopping Freight or Mixed	30	60
Stopping Freight following	Non-stopping Passenger	10	20
	Stopping Passenger	15	30
	Non-stopping Freight or Mixed	15	30
	Stopping Freight or Mixed	30	60

Notes: (a) Through express, mail or passenger trains are to be treated as non-stopping passenger trains. Trains which in the working timetables are designated "Mixed Train," "Diesel Power Van (D.P.V.)," "Motor Train," "Rail Motor," "Rail Pay Bus" (see regulation 6), or non-stopping "Express Freight" also express freight worked by diesel electric locomotives, are to be treated as passenger trains in connection with these regulations.

(b) Fast stock trains to be treated as mixed trains.

(c) Rail inspection cars may follow another train at an interval of five (5) minutes.

(d) If a train has been despatched on the authority of a Train Staff Ticket or Line Clear Report and the driver has been issued with Warning Form (N.W.F. T.0301) a following train must not be authorized to enter the section at a less interval than 20 minutes, irrespective of the intervals prescribed above.

1. Passenger train following non-stopping freight or mixed train - A non-stopping freight or mixed train must not be despatched in advance of a passenger train unless the resulting time prescribed for the section is sufficient to enable the freight or mixed train to arrive at the station in advance, clear inside the home signal, 10 minutes before the passenger train.

1. Passenger train following a stopping freight or mixed train - A stopping freight or mixed train must not be despatched in advance of a passenger train unless the resulting time prescribed for the section plus time required for work at intermediate platforms and sidings is sufficient to enable the freight or mixed train to arrive at the station in advance, clear inside the home signal, 10 minutes before the passenger train.

Of course, there are other special regulations relating to trains carrying a staff ticket which are required to stop at intermediate sidings, platforms and the like, telegraph or telephone block is to be maintained and a second train is not permitted into the section until the first has been reported as having arrived complete at the staff station in advance. Sections where there are unattended staff stations, time interval is to be maintained being thirty minutes during the day and sixty minutes at night, except where the running time for the section concerned is less than thirty or sixty minutes, and advice has been received that the train in advance has arrived complete at the station in advance. There is also a special regulation relating to the Northern Division which states that absolute block must be maintained between Dumaresq and Black Mountain with the exception of a freight train following any type of passenger train when an interval of ten minutes will suffice.

I would suggest that time interval working is not used all that much in NSW at the moment due to the amount of traffic over lines worked by this system and also because the interval specified is sometimes greater than the actual running time for the section in question, the Stockinbingal-Temora section is a good example of this point especially on the up at night. The possible exception to the above comment is no doubt the line between Goobang Junction and Broken Hill where the traffic could be such to warrant the use of time interval working.

Time interval working is also used on sections where Divisible ETS is provided as when this system is in operation, it is merely a variant of OTS&T working. The table reproduced here comes from the Northern WTT and is typical of that applicable in all areas.

On the line from Dubbo East Junction to Molong special time intervals apply when the Divisible ETS, for up trains only, is in operation. A second up goods or fast stock train must not be allowed to follow another goods or stock train into any section until an interval of twenty minutes has elapsed, thirty minutes during the night. (Reference is made to the Western WTT 1 July 1971.)

On a number of sections, particularly those where Divisible ETS is provided, a modified system of working is in operation, involving the use of intermediate telephone block posts. These special situations are covered at the end of this article.

It is rather interesting to note that the intervals have not changed over the last few decades. I have a copy of a Southern WTT for 1953 and the intervals are virtually the same as those mentioned above.

Queensland

According to Rule 233 of the Book of Rules, By-Law No 308, dated July 1934, a train must not be allowed to follow any other train into a section (where the block or the electric staff is not in operation) until an interval of ten minutes, or on mountain ranges, an interval of fifteen minutes, from the time of the other trains departure from any point. At night, or when trains are despatched during daylight but are not due to reach the staff station in advance until after dark, the interval must be twenty minutes; however, the sectional

INTERVAL BETWEEN TRAINS FOLLOWING EACH OTHER IN DIVISIBLE ELECTRIC TRAIN STAFF SECTIONS

The time intervals to be observed between following trains when the separate portions of a divisible staff are in use, are as follows:-

Description of train	Time interval to be observed after a train is despatched with the "Ticket" portion of the staff and before a second train is allowed to enter the section with the "Staff" portion of the staff	
	Daylight	Dark
(a) *Non-stopping Passenger following	Non-stopping Passenger	10
	Stopping Passenger	15
	Non-stopping Freight Express	20
	Non-stopping Freight or Mixed	20
	Stopping Freight or Mixed	20
Stopping Passenger following	Non-stopping Passenger	10
	Non-stopping Freight or Mixed	15
	Stopping Freight or Mixed	15
(b) Non-stopping Freight or Mixed following	Non-stopping Passenger	10
	Stopping Passenger	15
	Non-stopping Freight or Mixed	20
	Stopping Freight or Mixed	20
	Non-stopping Passenger	10
Stopping Mixed following	Stopping Passenger	15
	Non-stopping Mixed	15
	Non-stopping Freight	20
	Stopping Freight or Mixed	20
	Non-stopping Passenger	10
Stopping Freight following	Stopping Passenger	15
	Non-stopping Freight or Mixed	15
	Stopping Freight or Mixed	20

(a) Through express, mail and passenger trains or parcels, and express freight trains worked by diesel electric locomotives are to be treated as non-stopping passenger trains.

(b) Fast stock trains is to be treated as a mixed train.

(c) If a train has been despatched on the authority of the "Ticket" portion of the Divisible Electric Staff and the driver has been issued with Warning Form (B.W.F. T.6.301) a following train must not be authorized to enter the section at a less interval than 20 minutes, irrespective of the intervals prescribed above.

* Trains which in the working timetable are designated diesel train, diesel power van (D.H.), motor train, rail motor or rail bus are to be treated as passenger trains in connection with these regulations.

† Stopping or non-stopping passenger, or an express freight train following a stopping freight or mixed train - A stopping freight or mixed train must not be despatched in advance of a stopping or non-stopping passenger or express freight train unless the running time prescribed for the section, plus time required for work at intermediate platforms and sidings, is sufficient to enable the freight or mixed train to arrive clear of its home signal at the station in advance 10 minutes before the stopping or non-stopping passenger or freight express train.

MODIFIED DIVISIBLE STAFF WORKING

On the sections indicated herefor divisible staff working is in operation in a modified form, and the method of working is as prescribed in the regulations contained in Local Appendix, Northern Division.

Coffs Harbour - Bonville (telephone block post, parcel).

Mullumbimby - Harrington (telephone block post, Billabong).

running time must be taken into consideration.

Absolute block must be maintained where the sectional running time is less than the regulation interval. In exceptional cases, in the day time, where the line is comparatively straight and level, and a good view obtainable, a goods or stopping passenger train may be started five minutes after a fast or express train, but the train crew of the second train must be advised how long the previous train is in advance. Rule 445 states that where the first train is required to stop and work at unsignalled intermediate sidings, the second train must not be allowed into the section at a less interval than half an hour, and the thirty minute gap must be maintained, such that the second train may be required to pass certain sidings, platforms, etc., at times specified to a written notice, such times ensuring that the specified interval is maintained.

I have found no specific rules relating to Divisible ETS, even though I know that it does, or has, exist over certain sections. It may be concluded, therefore, that the above rules apply.

Clause 313 of the General Appendix, By-Law No 892, effective 1962, states that no train must be allowed on the sections Isis Junction-Goodwood, Goodwood-Kinkuna, Kinkuna-Elliott or Elliott-Bundaberg until the preceding train has arrived at the staff station in advance. Being on the main North Coast line it is quite obvious that there were special reasons for this particular clause and it is an example of an exception to the general Queensland regulations.

In the case of Train Order working, subclause (3) of clause 209 of the General Appendix, By-Law No 892, as amended by By-Law No 1002, with this clause effective from April 1971 states that, except in special circumstances where a breakdown, accident or a train has divided in a section, two trains shall not be authorised to be in any one section at the same time, and a Train Order shall not be issued for a train to enter a section until the Train Controller has received advice that the last preceding train through the section has arrived complete at the end of that section.

As a general comment, while the above rules and regulations are now a little old, it does give some indication as to the system of working used in Queensland.

Victoria

The guiding practice in Victoria is that of absolute block, which essentially means that two trains are not allowed in the one staff section at the same time. This can be modified by the opening of special temporary intermediate block posts and even temporary staff stations, but in these cases absolute block must still be maintained between the staff station and the block post, and then between the block post and the next staff station, etc., these temporary posts are noted in the various working timetables. As far as can be ascertained, there is no example of time interval working, where Train Staff & Ticket working is in operation.

On a number of electric staff sections, a composite electric staff is provided. This staff is very much like the NSW Divisible ETS with the exception that it can be divided into three sections; Ticket "A" and Ticket "B" on either end of the central "Staff" portion and thus allows three trains, if necessary, into one staff section at the same time. However, the same rules apply, in that absolute block working between staff stations and block posts must be maintained. The only exception is on the Toolamba-Tatura section where, in special circumstances, time interval working, with an interval of ten minutes, may be used.

For a period in the past, Victoria used a system of working called "Train Section Order" working, which is similar to Train Order working. Under section 11 of the rules applicable to this system "a train must not follow another train until an interval of 40 minutes has elapsed from the time of the previous train's departure, or, when the sectional running time is less than 40 minutes, until such previous train has been reported as having arrived at the next Control Station, or at an Unattended Station authorised to be open as a Block Post."

Tasmania

Under section 20 of the Regulations for Working Single Lines by Ordinary Train Staff or Ticket, Appendix II of the Book of Rules and Regulations 1943, "except where instructions are issued to the contrary, no Train must be allowed to follow any other Train on the same line at an interval of less than 15 minutes", nor then until a 'Notice of Train Ahead' form has been furnished to the driver of the appropriate train.

South Australia

The only specific reference I have found for interval working, or the lack of it, for South Australia (i.e. the former SAR) comes from Rule 255, clause (a) of the 1947 Rule Book, which states that "a train must not proceed into a block until the Guard and Engineman are in possession of a Train Order authorising them to do so, and such Order must not be issued if the Block be occupied, except as prescribed in subclause 1 of clause (c) hereunder", which relates to accident, breakdowns or trains too long in section. Thus it can be assumed that absolute block is maintained on sections worked by Train Orders. As an additional precaution, Rule 257A states that a Station Master must not despatch a train from his station without the authority of the Train Controller.

The only information that I have been able to obtain concerning the interval to be maintained on Train Order sections of the former Commonwealth Railways comes from an article written by a member some time ago (see Blocking Back No 5 March 1979) and he states that two trains must not be in the same section at the same time, and a train must not be authorised to enter a section until the train controller has received advice that the last preceding train has cleared the section. However, under ANR Regulation 27, special Train Interval Working may be invoked (interval is thirty minutes) but this is only in special circumstances and only with the permission of the Senior Train Controller, or someone of similar status.

Western Australia

Western Australia uses the absolute block system as evidenced by Rule 166, sub-rule (1) of the Book of Rules 1962, which states that "every person responsible for working trains must maintain the absolute block system and must not permit a train to leave a station until 'Line Clear' has been received from the station in advance". Rule 168 (1) further states that "where it is not possible to obtain 'Line Clear', due to the station in advance being unattended, a signalman must not permit a train to pass into the section until the ordinary section running time of the previous train has elapsed, and then only where the train about to enter the section has been brought to a stand and the driver furnished with a caution order (see form SW 3)". This rule goes on to talk about what must be done at unattended staff stations but the method of operation is basically the same.

Under certain circumstances, as laid down in the various WTTs, the above method of operation may be varied. From WTT Book No 3 (Eastern Narrow Gauge Railway) dated 3 July 1977, Nukarni 159Km from Goomalling on the line from Wyalkatchem to West Merredin and in the Nungarin to West Merredin section, may be opened as a block post to minimise delays on this section, but absolute block must be maintained between Nukarni and either West Merredin or Nungarin, depending on the direction of travel. A similar situation applies in the Kununoppin to Yelbeni section (on the same line) for 'Up' trains (towards Wyalkatchem) with Trayning (at 110Km) being the block post. WTT Book No 6, from 25 November 1979, authorises the same operation to apply between West Merredin and Muntadgin (West Merredin to Narrogin via Kondinin line) for 'Up' trains (towards Narrogin) with the block post at 237Km, while Book No 7 (4 May 1975) authorises the above operation at a number of places between Midland and Walk-away, seven separate sections are mentioned. In all cases reference to Rule 166 is required.

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Rocker Interlocking Notes - continued from page 57.

VR records do not distinguish between a No.5 or a No 5A pattern frame although I suspect only the first four may have been No 5, and the other 15 or so would have been certainly No 5A.

As far as identifying No 6 or 6A pattern, VR records again do not appear to be reliable. Sketches for some frames exist under both McKenzie & Holland and Victorian Railways titles. McKenzie & Holland will say it is a No 6A while VR, with a later date, will claim a No 6 pattern. I gather that even at this early stage (about 1888), VR was only concerned with major variations. As far as I am aware, sketches redrawn in recent times claim all frames to be No 6A. This I think is due to someone at some stage misunderstanding the variations within a frame.

--oOo--

S.R.S.V. CROSSWORD No 10

compiled by S. McLean

Across

- 1. It could be a crane, or have posts on it (6)
- 4. Make sure you block the train! (5)
- 8. Five hundred are out of fashion in Gippsland (3)
- 9. Ran under a rebuilt NSW station (9)
- 12. A shunting move done often in Warrnambool (2)
- 13. See 18 Down
- 14. One article for an old four wheeler (2)
- 15. Signals are on 1, but may be 2 or 3 (8)
- 17. Look, work on No 2 road! (4)
- 20. Found in oil trains (4)
- 21. Trackworkers remove staff from river (4)
- 24. It plugs up the gap between expresses (7)
- 26. Instructions drafted to use NG rail (11)
- 32. Three diesels found near 6 Down (3)
- 33. The French rave without any right, and the Americans depart (5)

1	G	A	N	T	R	Y				5	6	7
										8		
9	10	11	A	L	D	E	R	R	A		12	
13			C	O	R						14	
			R		15	P	O	S	I	T	16	
17	18		19			G			A	A		
20			S	S	C				21	22		23
			24									
	25											
	26	27				28	29			30		31
32						33						
34										35		

Down

- 1. Arranged neat glut of rails over Dudley Street (8)
- 2. Watering feature at the summit (4)
- 3. Only grey pile construction found near Clapham (12)
- 4. Rail vehicle not found at Daisy's wedding (8)
- 5. Among the more accurate model railway gauges (2)
- 6. Station with many trains each day - a hundred, or ten? (5)
- 7. Bloke ran goods trains around here (6)
- 10 and 35 Across. Sign of the platform's end (2,4)
- 11. Feature of railway operation seen in Macrossan (1,5)
- 16. One article from Mr. Scrimgeour (3)

- 34. Detection vehicle for tramway system and railway (6)
- 35. See 10 Down
- 18 and 35 Across. N. S. Cook becomes a writer (1,1,4)
- 19. Scribe from 7 Down (3)
- 22. I leave the Riviera, change, and reach my destination (6)
- 23. One of Alice's trains (4)
- 25. A catch point for young players (4)
- 27. Look closely at the centre section of a Garratt (3)
- 28. Some aesthetic carriage, this! (2)
- 29. Thanks for giving Train Arrival (2)
- 30. Mob runs to this Swiss chateau (3)
- 31. Points, signals and carriages can be (3)
- 32. Now an orange car in absolutely tip-top condition (2)

Solution to No 9: Across- 2. Railroads, 7. Long, 8. Railcars, 12. WC, 13. RY, 14. NBR, 16. In, 18. Arrow, 20. Leeds, 22. CPR, 24. Checkrail, 26. CS, 27. Or, 28. Urn, 29. Derail, 31. RA, 32. Werai, 33. Was, 35. Vic, 37. Railfan, 39. Ellam, 40. Eyre. Down- Down- 1. Murail, 2. Rail, 3. RER, 4. AL, 5. Down, 6. SNCB, 9. Crash, 10. Ayr, 11. Stockrail, 15. Railbus, 17. Newsrail, 19. WPR, 21. DC, 23. Railway, 25. Corail, 26. Curve, 29. DERM, 30. Era, 34. ANR, 36. CL, 38. FE.

All words featured the letters "rail" in either the clue or the answer.