C. J. Woolstenholmes

BRITISH RAILWAYS

(PRIVATE AND NOT FOR PUBLICATION)

NEWPORT

SIGNALLING CONTROL PANEL

DESCRIPTION AND METHOD OF OPERATION

SIGNALLING RECORD SOCIETY

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Description and Method of Operation of Newport Signalling Control Panel

DESCRIPTION

A. GENERAL

The installation comprises electrically worked points, multiple aspect colour light running signals, position light shunting signals, and ground frame releases. These are all operated from a control panel of the "mosaic" type using the "Entrance-Exit" method of operation.

B. CONTROL PANEL

The Control Panel depicts diagrammatically the running lines, points and signals in the area controlled therefrom.

Route Indications

B (1) Throughout the pictorial layout depicting the running lines is a series of rectangular apertures uniformly spaced in which white lights appear when the route has been correctly set for the passage of a train. These lights extend from the position on the panel corresponding to the signal in question as far as the next signal in advance. In addition, as explained later, certain white lights become illuminated in isolation.

Track Circuit Indications

B (2) The extent of all track circuits is also shown on the pictorial layout, a track circuit joint being shown as a small rectangle across the track line, and occupation of a track circuit is indicated by the display of red lights in the aforementioned apertures. When no lights appear or the white lights are displayed the applicable track circuit is clear.

Track Circuit Indications Power Supply

B (3) An indication that a power supply is available for the track circuit indications is provided on the panel.

Point Switches

B (4) Provided on the signalling control panel are free rotary switches placed in horizontal rows, one such switch being provided for each set of points, to enable the points to be individually operated if required. An arrow is engraved on the face of the switch, which may be turned so that the arrow is positioned upwards or inclined either to the left or right. To individually reverse or maintain reverse a set of points, the point switch is turned to the right, and similarly to the left for the normal position of the points. The switch is otherwise allowed to remain in the mid-position when automatic route setting is in operation. To the left and right of the point switch is a list of the positions in which all other points, interlocking with the points in question must be locked, before the points can respond to the switch. A red light

mounted immediately above the point switch will be illuminated whenever the points are locked either by the occupation of track circuits or by reason of the interlocking with the signals, or by the position in which other points lie, in which circumstances the points will not respond to the operation of the switch. The red light also appears immediately the point switch is placed to either the normal or reverse position, and the points have correctly responded, to indicate that the points will be held in that position until the switch is restored to the mid-position.

Point Indicators

B (5) Immediately to the left or right of the red light referred to in the above paragraph, a white light is illuminated when the points are correctly detected normal or reverse as the case may be. The number corresponding to that of the point switch is affixed on the sleeper at the appropriate points together with an arrow which indicates the direction of movement of the point tongues required to place the points in the normal position.

Point Indications

B (6) In addition to the above point indicators, the operation to the "ON" position of the switch on the panel labelled "POINT INDICATIONS" will cause the applicable rectangular apertures forming the normal or reverse position of the points to be illuminated by a white light. These indications will remain so long as the "POINT INDICATIONS" switch is in the "ON" position. The two white indications representing the normal and reverse positions of a particular pair of points will flash alternately (irrespective of the position of the "POINT INDICATIONS" switch) whenever the points concerned are out of correspondence with their controlling relays, and this will therefore occur during the time when the points are being moved.

Point Fault Indicators

B (7) In the event of incorrect operation of the point controlling mechanism, a flashing red light will appear to the right of the switch labelled "POINTS" on the panel, and a warning buzzer will sound. The buzzer can be silenced by turning this switch from the "CLEAR" to the "FAULT" position. The visual warning will then exhibit a steady red light which will remain until the Signal Technician has corrected the fault, whereupon the audible warning will again sound, and a white light to the left of the switch commences flashing. The buzzer can be silenced and the flashing white light made steady by returning the switch to the "CLEAR" position.

Signal Switches

B (8) For each signal a free rotary switch is provided on the panel track line in a position corresponding to the site of the signal. Engraved on the switch are one or two arrows. Multiple aspect colour light signals, draw ahead signals, and shunting signals displayed in conjunction with route indication, are controlled by a switch bearing

a red arrow. Subsidiary shunting signals and position light ground shunting signals, neither of which is displayed with a route indication are controlled by a switch bearing a yellow arrow. To maintain or restore a signal to danger the switch must be in the position where the arrows lie at right angles to the track line (normal position) whilst as a preliminary to clearing the signal the switch must be turned through 90° so that the arrow points along the track line in the same direction as the movement controlled by the signal (reverse position). In the case of those switches having two arrows, the appropriate arrow as described above should be turned in the direction of the movement.

Signal Indications

B (9) Incorporated in the signal profile adjacent to each signal switch is an aperture capable of displaying either a red or a green light corresponding to the signal being in the "ON" position or exhibiting any of the proceed aspects respectively. In the case of multiple aspect signals, failure of the signal lamp will cause the indication light in the signal profile to be extinguished and the multiple aspect signal next in rear to display a red indication. In the case of switches operating slots on signals controlled by other signal boxes, a white light is given in the aperture in the signal profile when the slot has been taken off, irrespective of whether the signal is at danger or not by reason of track circuit or other controls. The illumination of a red indication in such an aperture indicates that the slot has correctly replaced the controlled signal to danger.

Slot Indications

B (10) Where a signal is slotted or released by another signal box or by an acceptance plunger, a white slot off indication is provided. This is given by the illumination of a white light in the form of an arrowhead at the forward end of the route concerned, to the rear of the push button if one is provided.

Limit-of-Shunt Indicators

B (11) Where profiles of Limit-of-Shunt Indicators are provided on the panel, these include an aperture in which a red light is displayed so long as the lamps on the ground remain alight.

Approach Locking

B (12) All signals and slots are approach locked where necessary, i.e. the interlocking will be held even if the signal or slot switch is restored normal, should a train have reached a certain point on the approach side of the signal whilst a proceed aspect is being displayed. The interlocking will then be held until either the train passes the signal or an automatic time release has operated. The time release will not commence to operate until the signal is properly at danger and during the time the approach locking is effective the route lights concerned will remain alight. The standard timing of the automatic release is two minutes for signals controlling running movements and thirty seconds for ground shunt signals except in the

case of those automatically cleared by running signals reading over them (see Section D (12)) which are subject to two minutes.

Train Approaching Indications

B (13) Audible train approaching indications are provided on certain incoming lines. These will sound when a particular track circuit becomes occupied, or when an indication on the incoming line labelled "TRAIN APPROACHING" is illuminated.

Push Buttons

B (14) Except in those cases where a signal or slot does not interlock with points or other signals, a push button is provided on the track line at the forward end of the route. In addition to turning the signal switch to the reverse position the appropriate push button for the desired route must be subsequently momentarily depressed in order to clear the signal.

In certain cases one or more ground position light shunt signals may be provided in advance of a multiple aspect colour light signal. In such cases it will only be necessary to depress the push button immediately to the rear of the multiple aspect signal next in advance, or in the case of movements into sidings, the push button at the forward end of the route, in order to set up the complete route and automatically clear the intermediate position light ground signals. In such cases the switch for the position light ground signals concerned must be in the normal position.

In order more readily to locate the appropriate push buttons, they are coloured to agree with the colour of the arrow on the corresponding signal switch, i.e. they are coloured accordingly red, yellow, or red and yellow.

Extent of Overlap

B (15) The extent of the overlap ahead of the signal is indicated on the panel by a dot placed inside the rectangle that appears on the track line to indicate a track circuit joint. (See also Appendix "F".)

Emergency Bells

B (16) Plungers for operating Emergency Bells when their use is required by the Track Circuit Block or other regulations are provided on the panel.

When a bell is being rung from an adjacent signal box a white light above the respective plunger will be illuminated for several seconds to aid identification.

Train Ready to Start Indications

B (17) Where "Train Ready to Start" indications are provided these are positioned on the panel adjacent to certain platform starting signals. A flashing blue light will be displayed when the platform staff have operated a "Train Ready to Start" plunger. The light will continue to flash until the signal controlling the departure of the train is cleared, or the appropriate "TRAIN READY TO START CANCEL" plunger is depressed when the light will be extinguished.

Point Hand Cranks

B (18) For the emergency operation of points, hand cranks are located in release instruments near the points and these cranks are released by depressing a plunger on the panel adjacent to the relevant points. A white light is illuminated over the plunger when the latter is depressed, indicating that a release has effectively been given to the release instrument. When the hand crank has been withdrawn from its instrument, the white light is replaced by a red light.

In order to locate more readily the appropriate hand crank release plungers, these will be coloured to agree with the colour of the corresponding point switches.

Ground Frames

B (19) Where ground frames exist and are controlled from the panel, two position switches are provided on the panel adjacent to the diagrammatic position of the ground frame itself.

When the ground frame is not in use the release switch stands in the normal (N) position, and is placed in the reverse (R) position to release the ground frame. The aperture to the left of the release switch exhibits a red light when interlocking conditions prevent a release being given. The aperture to the right of the switch exhibits a white light when the switch is turned to release the ground frame. This white light is replaced by a red light when the release has been taken.

Miscellaneous Equipment

B (20) Also located on the signalling control panel are the following. Reference to their operation is given later in this publication:—

(*a*) Power Supply indication and switch.
(*b*) Switch for dimming ground signals.
(*c*) Switch for dimming panel lighting.
(*d*) Plungers for summoning Signal Technician.
(*e*) Socket for testing panel indication lamps.
(*f*) Switches for automatic working of controlled signals.
(*g*) Points fault reset plunger.

Train Describer Panel

B (21) For a description and method of operation of the Train Describer and Telephone Panel which is mounted above the Signalling Control Panel, reference must be made to separate publications.

METHOD OF OPERATION

C. POINTS

Automatic Operation

C (1) Points are normally operated automatically to the required position as necessary whenever a signal switch and associated push button have been operated to clear a desired signal provided the point switch is in its mid-

position and the points are free of interlocking and track circuit control. The setting up of a route, as the process of reversing a signal switch and depressing the push button is termed, calls the points to the required position and when they are properly set locks them in that position for as long as the signal switch remains reverse.

Points generally Non-restored

C (2) In general, points will continue to remain in the same position even after the signal switch is restored normal until called to a different position by the setting up of another route. An exception is made for certain points protecting the running line and in this case the points concerned will be called to the normal position automatically, but not locked, as soon as the signal switch has been restored normal and the points have become free of interlocking and track circuit control.

Individual Operation

C (3) The points may also be operated individually, if free, by use of the point switch. When the points have set properly, they will become locked and it will not be possible to set up a route which requires the points in the opposite position until the switch is replaced to the mid position. When it is desired to turn the point switch from Normal to Reverse or vice versa, a pause must be made in the mid-position until the red lock light is extinguished.

Point to Point Interlocking

C (4) The points, whether being set automatically or individually can only operate in the correct sequence as demanded by the point to point interlocking. When operating points individually, the points which interlock with the point in question must be placed in the position corresponding with the point setting demanded by the interlocking.

Track Circuit and Route Locking

C (5) The points will remain locked after being set for a route if the approach locking becomes effective until the time release has operated, or, if a train has passed the signal, until all the relevant track circuits have been cleared or, in the case of trailing points in the overlap of the signal concerned, until a separate automatic time release has operated to free the points in order to cater for a train not proceeding beyond the signal immediately protecting the trailing points. This latter time release is adjusted to ensure that such a train has come to a stand at the protecting signal.

Approach Locking of Facing Points

C (6) In the case of facing points which are insufficiently far in advance of the protecting signal to ensure that they will complete their movement should they commence to move immediately the signal is passed inadvertently by a train, in addition to the above track circuit locking the points will also be held by the occupation of track circuits on the approach side of the protecting signal even if it is maintained at danger. This ensures that the points cannot be reached by a train under any circumstances whilst they

are in motion under normal conditions. This track circuit locking is released by the operation of an automatic time release to permit the points to be altered after the train has come to a stand at the protecting signal.

Facing Points in Overlaps

C (7) In order to facilitate traffic working, facing points are not locked in either position when the signal next in rear of the signal immediately protecting such points is operated to a proceed aspect provided that the overlap applicable to the position to which the points may be altered is clear. Approach locking of these points, however, will apply as in the foregoing paragraph.

Failure of Points to Detect

C (8) Should the two white indications forming the normal and reverse position of the points on the signalling control panel continue to flash alternately for a greater time than would ordinarily be taken for the points to complete their movement after a route has been set up, the signal switch should be restored, and an attempt should be made to operate the points by means of the individual point switch before treating them as defective. If an obstruction unduly interferes with the free movement of points an overload protection device will come into operation to disconnect the power supply and the points will be stopped in mid-stroke. This device will be automatically reset as soon as the point switch is operated to alter the direction of motion of the points, so that further attempts can be made to set the points to the required position.

Hand Signalling

C (9) During the time that hand signalling has to be resorted to, or whenever other circumstances dictate, the point switches must always be used to set and lock the points in the required position before a train is authorised to travel over them other than by means of the fixed signals. It must not be assumed that the points are locked when the switch is turned to the required position unless the red lock light is illuminated. Separate instructions are issued regarding the application of Rule 78(b). One of the two white indications forming the normal and reverse positions of the points on the track diagram may be illuminated by the operation to "ON" of the "POINT INDICATIONS" switch. When these indications are in use they will be unaffected by the operation of the route lights described in Section D.

Point Contactor Fault

C (10) In the event of the "FAULT" Indication becoming displayed, an attempt may be made to clear the indication by pressing the plunger marked "POINTS FAULT RESET." If the fault does not clear the Signal Technician must be immediately advised and no attempt must be made to operate from the panel any points in the affected group until the failure has been rectified.

Hand Crank Operation

C (11) If it becomes necessary to resort to hand crank operation, all signals interlocking with the defective points must be first placed to danger. When this has been

done the appropriate hand crank may be withdrawn on an electrical release being given from the control panel.

The person appointed to operate the points must telephone the signalman when he arrives at the site and await instructions before attempting to remove the hand crank from the release instrument.

Instructions for operating the point machines by hand crank are given in the Regional Appendix to the Rule Book, pages 139 and 140.

After moving the points over by hand crank **the action which restores the power connections to the machine, i.e. replacing the strap over the plug of the Westinghouse Brake and Saxby Signal Company's Style M.3 machine, must not be performed until the signalman has given permission.**

The signalman must not authorise this action if he has given permission for a train to pass over the points until the train has cleared the points, or has been cancelled or is at a stand at the signal to the rear.

During the time of failure it may, however, be feasible to properly signal movements other than over the defective points. Attention is drawn to the importance of ascertaining that both facing and trailing points are correctly set before a train is authorised to pass over them other than by means of the fixed signals.

Hand Crank Release Instruments

C (12) When it is necessary to withdraw a hand crank from one of the instruments referred to in paragraph C (11) the signalman must depress the appropriate release plunger on the control panel, causing the white light above the plunger to be illuminated and a release to be given to the hand crank instrument. This will also cause a pointer on the hand crank instrument to be deflected. The hand crank may then be rotated through 180° in an anti-clockwise direction and withdrawn by pulling it away from the instrument. The signalman must keep the plunger depressed until the white light is replaced by a red light.

To replace the hand crank it must be inserted in the instrument with the crank end upwards and rotated in a clockwise direction until it hangs vertically downwards. The red light above the plunger on the control panel will then be extinguished.

The person replacing the hand crank in the release instrument must remain at the telephone adjacent to the release instrument until he receives permission to leave from the signalman, which must not be given until the red light has been extinguished as described above.

Failure of Hand Crank Instruments

C (13) In the event of a failure occurring whereby the hand crank cannot be withdrawn from the instrument, an emergency key may be obtained from the special key box provided in the signal box. The emergency key must then be taken to the hand crank release instrument and after the signalman's permission has been obtained, inserted in the small key hole in the front of the instrument and turned to release the hand crank which may be withdrawn from the instrument and used in accordance with paragraph C (11).

When the hand crank has been restored to the instrument after being used to operate the points the emergency key must be removed from the small key hole and returned to the signal box.

Instructions in Regional Appendix

C (14) The relevant instructions in the Regional Appendix for the particular type of point machine must be complied with in so far as they apply.

Ground Frame Operated Points

C (15) Where ground frame operated points exist, and they are released from the control panel, this release may be given when the red light to the left of the two position switch described in Section B (19) is not illuminated.

On receiving the request for a release, and provided the red lock light is not exhibited the signalman may turn the appropriate release switch from normal to reverse. A release is then given to the ground frame and a white light exhibited to the right of the two position switch. The key can then be withdrawn and the ground frame operated in accordance with the instructions contained in the Regional Appendix in so far as they apply. When the Annetts key is turned from position 1 to position 2 in the release instrument the right hand release light on the control panel will change from white to red. This red light will remain exhibited so long as the Annetts key is withdrawn. No movement conflicting with the ground frame can be set up until the ground frame points have been restored, the Annetts key returned to the key release instrument and turned clockwise to position 1 and the release switch on the control panel restored to the normal position, when the white release light will be extinguished.

Switch Collars

C (16) Switch collars must be placed over the point switches whenever the occasion demands.

D. SIGNALS

Operation

D (1) Signals and slots are operated by first turning the appropriate signal switch and then momentarily depressing the push button (where provided) for the required route.

D (2) For the signal or slot to clear, the switches for all conflicting signals and slots must have been replaced to the normal position, and such signals have been returned properly to danger and freed of approach locking after the previous movement. Interlocking

D (3) Where points are involved these will be set automatically and locked in the required position if not already in that position provided they are free to be so set at the instant of turning the signal or slot switch and depressing the push button. Should a point switch not be in its mid-position but in a position holding the points other than as required, the point switch must first be placed to its mid-position before the signal or slot switch and push button are operated. Similarly if the points are locked by reason of the interlocking or track circuit occupancy or by the point to point interlocking the action of turning the signal or slot switch and depressing the push button will not be effective. Automatic Route Setting

D (4) In the case of certain signals alternative routes are available to the same destination and in these cases preference is given automatically to one of these routes. Should both routes be free, and the signalman desires to use the non-preferred route, this can be achieved by setting points by means of the individual point switches. Reference to this is made in Appendix "C". Once the route is set up the individual point switch can be restored to the mid-position. Alternative Routes

D (5) Where points are involved a route cannot be preselected (i.e. stored up) since the operation of the push button is not effective unless at that instant all the points concerned are free to respond or are already set in the required position. Prevention of Preselection

D (6) After the route has been set up and the points, where these are involved, have been locked in the required position, a succession of white route lights will be illuminated in turn throughout the extent of the route. Whilst the route is so illuminated no conflicting or opposing route can be set up. Should a signal become approach locked, the route lights will continue to be displayed until the approach locking has been released. Indication of Route Set up

D (7) If a route has been correctly set up as described, the signal will clear either immediately or after the necessary delay where approach control is in force. Clearing of Signals

D (8) When a train has passed a signal which has been cleared for it, the white route lights appropriate to each successive track circuit will be extinguished and red track circuit lights will take their place. If the signal switch has not been restored to normal after the passage of the train white route lights will again take the place of the red lights Track Circuit Occupancy

as each track circuit becomes unoccupied. Should a train pass a signal at danger, all the track circuit indications applicable to the particular track circuit will become illuminated irrespective of point setting.

In general, the white route lights in advance of a train will remain illuminated until the train has occupied the appropriate track circuit, although the signal switch applicable to the signal in the rear may have been restored to normal. In some cases, however, in order to facilitate traffic working, the white route lights in advance of a train may be extinguished after an interval of time consistent with the train having come to a stand. Under these conditions the interlocking has then become freed to enable an opposing shunting move to take place.

D (9) Multiple aspect colour light signals are controlled by track circuits and interlock with points and other signals as far as the next similar signal ahead and also interlock with signals controlling opposing movement within and beyond the overlap. In normal cases these controls extend up to the termination of the overlap, but in special cases where such controls would have an adverse effect on traffic working they are modified and the signal in the rear is allowed to display a yellow aspect (delayed yellow) after the approaching train has been brought nearly to a stand, provided the line is clear and the points are locked correctly up to the next signal. Multiple Aspect and Draw Ahead Signals

Certain of the multiple aspect colour light signals are provided with position light draw ahead signals. In these cases, the appropriate signal switch and push button are operated in the normal manner, but if the track circuit conditions are such that the multiple aspect signal cannot clear due to a train standing in rear of the signal next in advance, a draw ahead aspect will be displayed to the driver. Once a draw ahead aspect has been displayed it will remain thus even though the track circuit in rear of the next signal becomes unoccupied subsequently. Multiple aspect colour light and position light draw ahead signals will be replaced to danger on being passed, and the signal or slot switch must then be restored to normal in accordance with the Rules (except when automatic working is in force) and the signal will not clear again until this has been done, and the switch and push button (if provided) re-operated.

D (10) Position light shunt signals where provided subsidiary to multiple aspect colour light signals, interlock with points and signals up to the next signal in advance and beyond as necessary. Where a draw ahead signal is also provided the two signals are combined. Shunt Signals

Position light shunt signals are replaced to danger on being passed, and the signal switch must be restored

to normal as described in paragraph D (9) before the signal can be cleared for a second time.

Ground Shunt Signals

D (11) Position light ground shunting signals interlock with points and signals up to the next signal in advance and beyond as necessary. Ground shunting signals are replaced to danger by the movement clearing the first track circuit ahead of the signal and the signal switch must be restored to normal as described in paragraph D (9) before the signal can be cleared for a second time.

Ground Shunting Signals applicable to Running Movements

D (12) In certain cases position light ground shunting signals are provided, applicable to the line and direction of traffic movements for which a multiple aspect signal is cleared. In these cases, the operation of the signal switch for the multiple aspect signal and the depression of the push button immediately to the rear of the next multiple aspect signal in advance (or in the case of signals reading into sidings, or similar places, the push button at the forward end of the route) will cause the intermediate ground shunting signal or signals, to display a proceed aspect, but it is essential for these movements that the switch for the intermediate ground shunting signal is in the normal position. The multiple aspect signal will not clear until the appropriate ground shunting signal is displaying a proceed aspect.

A ground shunting signal will continue to display a proceed aspect when a train is approaching it under these circumstances even after the main signal has been replaced, either by track circuit control or by the replacement to normal of the entrance switch, until the train has passed the ground shunting signal.

Should it become necessary to replace the ground shunting signal to danger after having been cleared automatically as described above, the switch for the controlling multiple aspect signal should be restored normal (if not already in that position) followed by turning the ground shunting signal switch to the reverse position and back to normal again.

When such ground shunting signals are used for shunting movements their operation and control is as described in paragraphs D (1) and D (11).

The signal indications displayed through the aperture in the profile of such ground shunting signals on the signalling control panel will at all times give a correct indication of the aspect exhibited by the signal irrespective of whether it has been operated antomatically or by operation of its own switch.

Interlocking of Opposing Routes

D (13) In general when a signal has been cleared and the train has passed it, it will not be possible to set up an opposing route, even though the signal switch may have

been restored to normal, until the train has passed completely beyond the signal permitting the opposing movement. In order to facilitate certain movements, this control has been modified in that the opposing route can be set up after a time delay consistent with the train having come to a stand between the two opposing signals.

Propelling Movements

D (14) Where propelling movements could predominate, position light signals, and occasionally multiple aspect signals, will not be replaced to danger independently of the signal switch until the whole of the train has passed the signal.

To facilitate movements it may be possible in some instances to clear shunt signals although the intervening track circuits have not been cleared, provided the shunt signals are cleared progressively in the opposite direction to that of the proposed movement.

Approach Control

D (15) Under "delayed yellow" conditions and in the case of multiple aspect signals in rear of facing junctions over which only a restricted speed is permissible, also where draw ahead and shunt signals are provided below multiple aspect signals, the appropriate signal will not clear after the route has been set up until a track circuit has been occupied (for a given time if necessary) so as to ensure the speed of the train has been suitably reduced.

Restoring Signal Switches

D (16) Except in emergencies, after a signal has been cleared for an approaching train, the signal or slot switch must not be restored normal if the train has passed the point at which approach locking commences unless an intervening signal is already at danger.

If a multiple aspect signal or a ground shunting signal is replaced to danger in such circumstances, more restrictive aspects would be caused to be displayed in the face of the approaching train. Should the switch for a multiple aspect signal not be restored to normal after the passage of a train, and if automatic working is not in force, a white light immediately in advance of the switch will flash until this has been done.

Normal Position of Switches

D (17) Signal switches should always be maintained in the normal position, except when required to operate a signal for a train, in the interests of orderliness and efficient operation of the panel.

Indication of Overlap

D (18) When a route is set up preparatory to clearing a multiple aspect colour light signal, the position of any facing points which may be in the overlap concerned are indicated by the illumination of the appropriate white light forming the normal or reverse position of the points on the signalling control panel. In addition if any points in the overlap are in that position which will cause the

signal to display a delayed yellow aspect, a similar points indication will be given.

Overlap where Delayed Yellow Aspect Provided

D (19) If, when a route has been set up and the signal concerned is displaying or is about to display a delayed yellow aspect on account of points in the overlap not being in the required positions (whether locked or not), the operation of the points to the position required can only be made by using the individual points switch or by setting up the appropriate route controlling the signal immediately in rear of the points.

Switch Collars

D (20) Switch and push button collars must be used whenever circumstances demand this being done.

Push Button Operation

D (21) It is essential in setting up a route that the push button be depressed only after the switch has been placed to the reverse position, otherwise the associated relay will not operate and therefore the route will not be set up. The push button must also be fully and deliberately depressed as a mere "flick" may not allow sufficient time for the relay to operate.

Shunter's Acceptance Plungers

D (22) Before a train can be signalled into a siding or similar line where shunting operations are under the control of a shunter, or other authorised person, he must depress momentarily the applicable shunter's acceptance plunger provided.

Automatic Working of Controlled Signals

D (23) By means of a rotary switch which is labelled "CONTROL" and "AUTO," certain signals can be made to work automatically when required.

Before the switch is operated in order to introduce automatic working, all the signal switches for the appropriate signals should be in the reverse position.

When it is required to resume controlled working, the switch should be turned to "CONTROL" which will prevent the signals clearing automatically after the passage of the next train.

E. GENERAL NOTES

Power Failure

E (1) In the event of a complete power failure, even for the limited time such as would exist before the standby supply is connected, this would cause signals to fail in the face of approaching trains and under no circumstances must any route be set up, either by signal switches and buttons or individual point switches until it has been ascertained that no train is approaching on or foul of the route in question.

Signal Lamps Dimming Switch

E (2) During the hours of darkness, the "GROUND SIGNALS" switch should be operated to the "DIM" position. This will cause the lamps of all position light ground shunting signals to be dimmed in order to eliminate unnecessary glare to drivers.

Panel Dimming Switch

E (3) When so desired, the indication lights on the signalling control panel and the train describer panel may be dimmed by the use of the "PANEL" switch.

Miscellaneous Indications

E (4) Should the "POWER SUPPLY" indicator display "STANDBY" or "T.C. INDICATIONS" or "POINTS" indicator show "FAULT", the Signal Technician should be notified immediately.

Signal Technician's Call Plunger

E (5) In the event of a Signal Technician not being available at the signal box, depression of the "CALL TECHNICIAN" plunger on the signalling control panel will sound horns in the appropriate Signal Technician's area.

On hearing the horn, the Signal Technician will contact the signalman from the nearest available telephone.

Lamp Test Socket

E (6) The "LAMP TEST" socket in the top left hand corner of the signalling control panel is for the use of the Signal Technician.

General Failure of Indication Lights

E (7) Should there be a general failure of indication lights on the control panel, the latter cannot be relied upon to give a correct indication of the occupancy of track circuits and the Signalman must carry out the provisions of Track Circuit Block Regulation 13 (*b*).

Testing of Alarm Buzzer

E (8) The emergency bells and the alarm buzzer provided in conjunction with the indication and warning switches should be tested at the commencement of each turn of duty, to ensure that they function correctly when required.

Additional Information

E (9) Additional information is given in the Appendices to these instructions, which includes the following:

(*a*) Additional information to the Description and Method of Operation.

(*b*) List of Routes.

(*c*) List of Alternative Routes and method of selecting the non-preferred route.

(*d*) List of restored points.

(*e*) List of facing points held by track circuit on the approach side of the protecting signal.

(*f*) List of overlaps not indicated on panel.

(*g*) Point Setting (Rule 78 (*b*)) Table.

(*h*) Plan of the area controlled by the signal box showing the layout and signalling controlled.

Appendices to:

Description and Method of Operation

of

Newport Signalling Control Panel

Appendix "A"

(1) Trains will be worked to and from Magor, East Usk, Llantarnam Junction, Park Junction, Waterloo Loop and Marshfield Signal Boxes under Track Circuit Block Regulation. Block Working

(2) Hand Cranks for points worked from the panel, will be located in release instruments at the undermentioned places: Hand Cranks

Points Covered	Hand Crank Location
702, 703	702A Points
704 to 709	706A Points
711 to 717	Between M. 1 signal and 714B points
718 to 724	720B points
732, 733	Up side of line opposite 732 points
734 to 741	Up side of Maindee North Relay Room
745 to 758	By stop block, river end of fish sidings
	In fork of 752 points
765 to 780	To rear of N. 228 signal
	Near N. 323 signal
786 to 796	Near 789 points
	Down side of Down Relief near Gaer Relief Ground Frame
798 to 805	Up side of Up Relief opposite 805A points
810, 811, 812, 814, 815, 819, 820, 821, 822, 824	Between Main and Relief midway between 821A and 822B points
813, 816, 817, 823	Between Main and Relief near 825D points
825 to 831	Near N. 242 signal

(3) Special Instructions for working Caerleon Ground Frames are given on page 124 of the Newport District Sectional Appendix to the Working Time Table. Caerleon Ground Frames

(4) Points numbered 798, 799, 800, 804, 805 are slotted by Waterloo Loop Signal Box, and those numbered 704, 708, 709 are slotted by East Usk Signal Box and these points will be locked normal until the appropriate signalman has pulled reverse his Interlocking Lever. Slotted Points

When this has been done, a white light designated "SLOT" will be exhibited above the appropriate point switch on the panel. The points may then be reversed, either by setting up a route which requires them reverse, or by using the individual point switch as required.

When the movement over the points has been completed, the points must be returned to the normal position either by means of the individual point switch, or by setting up a route which requires them normal, as is convenient.

It is essential that this should be done, as until the points have been set and detected normal the interlocking lever in the appropriate signal box cannot be returned to its normal position, and this may prevent the carrying out of further movements at the signal box concerned.

When the points have been correctly detected normal the point switch should be restored to its mid-position, or the signal switch restored normal in the usual manner.

When the interlocking lever at the appropriate signal box has been restored normal, the slot light will go out.

(5) Points numbered 765 and 769 require a release from the shunter before they can be made to go reverse. When the release has been obtained a white light designated "SHUNTERS RELEASE" will be exhibited above the appropriate point switch, indicating that the points will then go reverse when required. Slotted Points

Appendix "B"

LIST OF ROUTES

Abbreviations:—

U.	..	East Usk Interlocking Area.
M.	..	Maindee Main Interlocking Area.
L.	..	Maindee North Interlocking Area.
E.	..	Newport East Interlocking Area.
W.	..	Newport West Interlocking Area.
G.	..	Gaer Interlocking Area.
B.	..	Ebbw Interlocking Area
M.U.	..	East Usk Signal Box.
W.L.	..	Waterloo Loop Signal Box.
P.J.	..	Park Junction Signal Box.
M.A.	..	Multiple Aspect Signal.
D.Y.	..	Delayed Yellow Aspect.
D.A.	..	Draw Ahead Signal.
P.L.S.	..	Position Light Shunt Signal.
P.L.G.S.	..	Position Light Ground Shunt Signal.
Jn. I.	..	Junction Indicator.
R.I.	..	Route Indicator.
L.O.S.	..	Limit of Shunt.

EAST USK INTERLOCKING AREA

Signal No.	Route	Destination	Type of Signal	Notes
U. 2		DR. 156 Signal	M.A.	
U. 3		U. 5 Signal	Slot on MU. 36	
U. 4		N. 418 Signal	Slot on MU. 5 and MU. 17	
U. 5	A	N. 139 Signal	Slot on MU. 35	
	B	N. 337 Signal	Slot on MU. 35	
U. 8	A	U. 10 Signal	P.L.G.S.	
	B	N. 218 Signal	P.L.G.S.	
U. 10	A	N. 416 Signal	P.L.G.S.	
	B	Limit of Shunt (Up Relief)	P.L.G.S.	
N. 135	A	N. 139 Signal	M.A.	
	B	N. 139 Signal	P.L.S.	
N. 139		UM. 155 Signal	M.A.	
N. 212		N. 214 Signal	M.A.	
N. 214	A	N. 416 Signal	M.A. with Pos. 1 Jn. I.	
	B	N. 218 Signal	M.A.	
N. 333		N. 335 Signal	M.A./D.Y.	
N. 335	A	N. 139 Signal	M.A. with pos. 1 Jn. I.	
	B	N. 337 Signal	M.A.	
	C	N. 337 Signal	P.L.S.	
	D	East Usk Up Branch	M.A./D.A./P.L.S. Pos. 4 Jn. I. with M.A. and D.A.	Slotted by M.U. 24 or MU. 25

Signal No.	Route	Destination	Type of Signal	Notes
N. 337		N. 339 Signal	M.A.	
N. 339	A	UR. 155 Signal	M.A.	
	B	Steel Works Ingoing Road	P.L.S. with "S.W." R.I.	Requires acceptance release
N. 408		N.410 Signal	M.A./D.Y.	
N. 410		DR. 156 Signal	M.A.	
N. 414		N.416 Signal	M.A.	
N. 416	A	Sidings	P.L.S. with "N.1." or "N.2" or "S" R.I.	Slotted by MU. 29
	B	N. 418 Signal	M.A./D.Y.	
	C	N.418 Signal	P.L.S.	

MAINDEE MAIN INTERLOCKING AREA

M. 1	A	No. 1 Reception Siding	P.L.G.S.	Requires acceptance release
	B	No. 2 Reception Siding	P.L.G.S.	Requires acceptance release
M. 2	A	N. 422 Signal	P.L.G.S.	
	B	N. 220 Signal	P.L.G.S.	
M. 4	A	N. 422 Signal	M.A. with "4" R.I.	
	B	N. 220 Signal	M.A. with "2" R.I.	
M. 6		L. 3 Signal	P.L.G.S.	
M. 8		N. 124 Signal	M.A.	
N. 031	A	N. 133 Signal	M.A.	
	B	N. 333 Signal	M.A. with pos. 4 Jn. I.	
	C	No. 1 Reception Siding	P.L.S. with "N.1." R.I.	Requires acceptance release
N. 129	A	L. 5 Signal	M.A./D.A. with pos. 2 Jn. I.	
	B	N. 535 Signal	M.A./D.Y. with pos. 1 Jn. I.	
	C	N. 131 Signal	M.A./D.Y.	
N. 131	A	N. 133 Signal	M.A.	
	B	N. 133 Signal	P.L.S.	
	C	N. 333 Signal	M.A. with pos. 4 Jn. I.	
	D	No. 1 Reception Siding	P.L.S. with "N.1" R.I.	Requires acceptance release
N. 133		N. 135 Signal	M.A.	
N. 218		N. 220 Signal	M.A.	
N. 220	A	N. 222 Signal	M.A.	
	B	N. 033 Signal	M.A. with pos. 4 Jn. I.	
N. 222	A	N. 424 Signal	M.A. with pos. 1 Jn. I.	
	B	N. 224 Signal	M.A.	
N. 229		N. 131 Signal	M.A./D.Y.	
N. 329	A	N. 131 Signal	M.A. with pos. 1 Jn. I.	
	B	N. 331 Signal	M.A.	
N. 331	A	N. 333 Signal	M.A.	
	B	No. 1 Reception Siding	P.L.S. with "N.1" R.I.	Requires acceptance release

Signal No.	Route	Destination	Type of Signal	Notes
N. 418		N. 420 Signal	M.A./D.Y.	
N. 420	A	N. 422 Signal	M.A./D.Y.	
	B	N. 220 Signal	M.A. with pos. 4 Jn. I.	
N. 422		N. 424 Signal	M.A./D.Y.	
N. 622	A	N. 224 Signal	M.A.	
	B	N. 124 Signal	M.A. with pos. 4 Jn. I.	

MAINDEE NORTH INTERLOCKING AREA

L. 1		N. 035 Signal	P.L.G.S.	
L. 2	A	L.O.S. (Up Hereford)	P.L.G.S.	
	B	L. 4 Signal	P.L.G.S.	
L. 3	A	L.O.S. (Down Hereford)	P.L.G.S.	
	B	L.O.S. (Down Hereford Goods)	P.L.G.S.	
L. 4	A	L. 10 Signal	P.L.G.S.	
	B	M. 8 Signal	P.L.G.S.	
L. 5	A	L. 7 Signal	M.A./D.A. with "G" R.I.	
	B	L. 7 Signal	P.L.S.	
	C	N. 537 Signal	M.A. with "5" R.I.	
	D	L.O.S. (Down Hereford)	P.L.S.	
	E	L.O.S. (Down Hereford Goods)	P.L.S.	
L. 6	A	L. 8 Signal	M.A. with "E" R.I.	
	B	N. 622 Signal	M.A. with "6" R.I.	
	C	M. 8 Signal	M.A./D.A. with "G" R.I.	
L. 7	A	N. 539 Signal	M.A.	
	B	N. 539 Signal	P.L.S.	
L. 8		N. 031 Signal	M.A./D.Y.	
L. 10	A	Down Maindee Loop	P.L.G.S.	Attaching only
	B	Maindee Depot	P.L.G.S.	
N. 033		N. 035 Signal	M.A./D.Y.	
N. 035	A	L. 7 Signal	M.A./D.A. with pos. 1 Jn. I.	
	B	N. 537 Signal	M.A.	
N. 535	A	L. 7 Signal	M.A./D.A. with pos. 1 Jn. I.	
	B	L. 7 Signal	P.L.S.	
	C	N. 537 Signal	M.A.	
	D	L.O.S. (Down Hereford)	P.L.S.	
	E	L.O.S. (Down Hereford Goods)	P.L.S.	
N. 537	A	N. 539 Signal	M.A.	Signal will work automatically if switch left reverse
	B	N. 539 Signal	P.L.S.	

Signal No.	Route	Destination	Type of Signal	Notes
N. 539		N. 541 Signal	M.A.	Signals will work automatically if switch left reverse
N. 616		N. 618 Signal	M.A.	
N. 618	A	L. 6 Signal	M.A./D.A. with pos. 1 Jn. I.	
	B	N. 620 Signal	M.A.	
N. 620	A	N. 031 Signal	M.A./D.Y. with pos. 1 Jn. I.	
	B	N. 622 Signal	M.A./D.Y.	
	C	M. 8 Signal	M.A./D.A. with pos. 4 Jn. I.	

NEWPORT EAST INTERLOCKING AREA

E. 2	A	N. 628 Signal	P.L.G.S.	
	B	N. 428 Signal	P.L.G.S.	
	C	E. 10 Signal	P.L.G.S.	
E. 3	A	Spur	P.L.G.S.	
	B	N. 127 Signal	P.L.G.S.	
	C	N. 227 Signal	P.L.G.S.	
E. 4	A	N. 528 Signal	P.L.G.S.	
	B	N. 226 Signal	P.L.G.S.	
	C	N. 126 Signal	P.L.G.S.	
E. 5	A	N. 129 Signal	P.L.G.S.	
	B	N. 229 Signal	P.L.G.S.	
	C	N. 329 Signal	P.L.G.S.	
	D	L.O.S. (Down Rlf.)	P.L.G.S.	
E. 6	A	E. 10 Signal	P.L.G.S.	
	B	E. 12 Signal	P.L.G.S.	
E. 7		N. 129 Signal	P.L.G.S.	
E. 8	A	Fish Sidings	P.L.G.S.	
	B	N. 628 Signal	P.L.G.S.	
E. 10	A	W. 6 Signal	P.L.G.S.	
	B	N. 528 Signal	P.L.G.S.	
E. 12	A	N. 226 Signal	P.L.G.S.	
	B	N. 126 Signal	P.L.G.S.	
N. 124	A	N. 628 Signal	M.A./D.Y./D.A. with "6" R.I.	
	B	N. 628 Signal	P.L.S.	
	C	N. 428 Signal	M.A./D.Y./D.A. with "4" R.I.	
	D	N. 428 Signal	P.L.S.	
	E	E. 10 Signal	P.L.S.	
	F	N. 528 Signal	M.A./D.Y./D.A. with "5" R.I.	
	G	N. 226 Signal	M.A./D.Y./D.A. with "2" main and "2" subsidiary R.I.s	(Via 745R) Non-preferred route
	H	N. 126 Signal	M.A./D.Y./D.A. with "1" main and "2" subsidiary R.I.s	(Via 745R, 753R) non-preferred route
	I	E. 4 Signal	P.L.S.	

Newport East Interlocking Area—continued

Signal No.	Route	Destination	Type of Signal	Notes
N. 124 *continued*	J	N. 226 Signal	M.A./D.Y./D.A. with "2" main and "1" subsidiary R.I.s	(Via 754R) preferred route
	K	N. 126 Signal	M.A./D.Y./D.A. with "1" main and "1" subsidiary R.I.s	(Via 745N) preferred route
	L	E. 6 Signal	P.L.S.	
N. 125	A	N. 127 Signal	M.A./D.Y./D.A. with "1" R.I.	
	B	N. 227 Signal	M.A./D.Y./D.A. with "2" R.I.	
N. 126	A	N. 228 Signal	M.A./D.Y./D.A. with "2" R.I.	
	B	N. 128 Signal	M.A./D.Y./D.A. with "1" R.I.	
	C	Godfrey Road Sidings	P.L.S. with "L" R.I.	Requires acceptance release
N. 127	A	N. 129 Signal	M.A. with "1" R.I.	
	B	E. 7 Signal	P.L.S.	
	C	N. 129 Signal	P.L.S.	(Via 753R and 745R)
	D	N. 229 Signal	M.A. with "2" R.I.	
	E	N. 229 Signal	P.L.S.	
N. 224	A	N. 628 Signal	M.A./D.Y./D.A. with "6" R.I.	
	B	N. 628 Signal	P.L.S.	
	C	N. 428 Signal	M.A./D.Y./D.A. with "4" R.I.	
	D	N. 428 Signal	P.L.S.	
	E	E. 10 Signal	P.L.S.	
	F	N. 528 Signal	M.A./D.Y./D.A. with "5" R.I.	
	G	N. 226 Signal	M.A./D.Y./D.A. with "2" R.I.	
	H	N. 126 Signal	M.A./D.Y./D.A. with "1" R.I.	
	I	E. 4 Signal	P.L.S.	
N. 225	A	N. 127 Signal	M.A./D.Y./D.A. with "1" R.I.	
	B	N. 227 Signal	M.A./D.Y./D.A. with "2" R.I.	
N. 226	A	N. 228 Signal	M.A./D.Y./D.A. with "2" R.I.	
	B	N. 128 Signal	M.A./D.Y./D.A. with "1" R.I.	
	C	Godfrey Road Sidings	P.L.S. with "L" R.I.	Requires acceptance release
N. 227	A	N. 129 Signal	M.A. with "1" main and "1" subsidiary R.I.s	(Via 754R) preferred route
	B	E. 7 Signal	P.L.S.	
	C	N. 129 Signal	M.A. with "1" main and "2" subsidiary R.I.s	(Via 745R) non-preferred route
	D	N. 129 Signal	P.L.S.	(Via 745R)
	E	N. 229 Signal	M.A. with "2" R.I.	
	F	N. 229 Signal	P.L.S.	

Newport East Interlocking Area—continued

Signal No.	Route	Destination	Type of Signal	Notes
N. 327	A	N. 129 Signal	M.A. with "1" main and "1" subsidiary R.I.s	(Via 750R) preferred route
	B	E. 7 Signal	P.L.S.	
	C	N. 129 Signal	M.A. with "1" main and "3" subsidiary R.I.s	(Via 746R and 745R) non-preferred route
	D	N. 129 Signal	P.L.S.	(Via 746R)
	E	N. 229 Signal	P.L.S.	
	F	N. 329 Signal	M.A./D.Y. with "3" R.I.	
	G	N. 329 Signal	P.L.S.	
N. 424	A	N. 628 Signal	M.A./D.Y./D.A. with pos. 1 Jn. I.	
	B	N. 628 Signal	P.L.S.	
	C	N. 428 Signal	M.A./D.Y./D.A. "4" R.I. with D.A. only	
	D	N. 428 Signal	P.L.S.	
N. 527	A	N. 129 Signal	M.A. with "1" main and "2" subsidiary R.I.s	(Via 751N) preferred routes
	B	N. 129 Signal	P.L.S.	
	C	N. 229 Signal	M.A. with "2" R.I.	
	D	N. 229 Signal	P.L.S.	
	E	N. 129 Signal	M.A. with "1" main and "3" subsidiary R.I.s	(Via 746R, 751R) non-preferred routes
	F	N. 129 Signal	P.L.S.	
	G	N. 329 Signal	M.A. with "3" R.I.	
	H	N. 329 Signal	P.L.S.	
N. 627	A	N. 129 Signal	M.A. with "1" R.I.	
	B	N. 129 Signal	P.L.S.	
	C	N. 229 Signal	P.L.S.	
	D	N. 329 Signal	M.A. with "3" R.I.	
	E	N. 329 Signal	P.L.S.	
	F	L.O.S. (Down Rlf.)	P.L.S.	
	G	Spur	P.L.S. with "S" R.I.	

NEWPORT WEST INTERLOCKING AREA

W. 3	A	Platform Bay	P.L.G.S.	
	B	Middle Sidings	P.L.G.S.	
W. 4	A	Spur	P.L.G.S.	
	B	N. 430 Signal	P.L.G.S.	
W. 5	A	W. 9 Signal	P.L.G.S.	
	B	W. 7 Signal	P.L.G.S.	
	C	Goods Yard	P.L.G.S.	Requires acceptance release
W. 6	A	W. 8 Signal	P.L.G.S.	
	B	N. 230 Signal	P.L.G.S.	
	C	N. 130 Signal	P.L.G.S.	
W. 7	A	E. 5 Signal	P.L.G.S.	
	B	N. 627 Signal	P.L.G.S.	
	C	Platform Bay	P.L.G.S.	

Signal No.	Route	Destination	Type of Signal	Notes
W. 8		N. 430 Signal	P.L.G.S.	
W. 9	A	N. 527 Signal	P.L.G.S.	
	B	N. 327 Signal	P.L.G.S.	
	C	E. 5 Signal	P.L.G.S.	
W. 10		N. 230 Signal	P.L.G.S.	
W. 11	A	N. 527 Signal	P.L.G.S.	
	B	N. 327 Signal	P.L.G.S.	
	C	E. 5 Signal	P.L.G.S.	
W. 12	A	Goods Yard	P.L.S. with "S" R.I.	Requires acceptance release
	B	N. 430 Signal	M.A. with "4" R.I.	
	C	N. 430 Signal	P.L.S.	
	D	N. 230 Signal	M.A. with "2" R.I.	
	E	N. 230 Signal	P.L.S.	
W. 13		N. 527 Signal	P.L.G.S.	
W. 15	A	N. 125 Signal	P.L.G.S.	
	B	N. 225 Signal	P.L.G.S.	
	C	Platform Sidings	P.L.G.S.	
W. 17	A	N. 125 Signal	P.L.G.S.	
	B	N. 225 Signal	P.L.G.S.	
W. 19		W. 17 Signal	P.L.G.S.	
N. 123	A	N. 125 Signal	M.A./D.Y./D.A. with "1" R.I.	
	B	N. 225 Signal	M.A./D.Y./D.A. with "2" R.I.	
	C	W. 17 Signal	P.L.S.	
	D	N. 527 Signal	M.A./D.Y./D.A. with "5" R.I.	
	E	N. 327 Signal	M.A./D.Y./D.A. with "3" R.I.	
	F	W. 11 Signal	P.L.S.	
N. 128	A	N. 230 Signal	M.A. with "2" R.I.	
	B	N. 230 Signal	P.L.S.	
	C	N. 130 Signal	M.A. with "1" R.I.	
	D	N. 130 Signal	P.L.S.	
	E	Tunnel Siding	P.L.S. with "S" R.I.	
N. 130		N. 134 Signal	M.A.	
N. 223	A	N. 125 Signal	M.A./D.Y./D.A. with "1" R.I.	
	B	N. 225 Signal	M.A./D.Y./D.A. with "2" R.I.	
	C	W. 15 Signal	P.L.S.	
	D	N. 527 Signal	M.A./D.Y./D.A. with "5" R.I.	
	E	N. 327 Signal	M.A./D.Y./D.A. with "3" R.I.	
	F	W. 11 Signal	P.L.S.	
	G	Platform Bay	M.A./D.A. with "B" R.I.	
	H	W. 7 Signal	P.L.S.	
N. 228	A	N. 230 Signal	M.A. with "2" R.I.	
	B	N. 230 Signal	P.L.S.	
	C	N. 130 Signal	M.A. with "1" R.I.	
	D	N. 130 Signal	P.L.S.	
	E	Tunnel Siding	P.L.S. with "S" R.I.	

Signal No.	Route	Destination	Type of Signal	Notes
N. 230	A	N. 234 Signal	M.A./D.Y.	
	B	N. 234 Signal	P.L.S.	
N. 323	A	N. 527 Signal	M.A./D.Y./D.A. with "5" R.I.	
	B	W. 9 Signal	P.L.S.	
	C	N. 327 Signal	M.A./D.Y./D.A. with "3" R.I.	
N. 428	A	N. 430 Signal	M.A. with "4" R.I.	
	B	N. 430 Signal	P.L.S.	
	C	N. 230 Signal	M.A. with "2" main and "4" subsidiary R.I.s	(Via 768R) preferred route
	D	N. 230 Signal	P.L.S.	(Via 768R) preferred route
	E	W. 8 Signal	P.L.S.	
	F	N. 230 Signal	M.A. with "2" main and "3" subsidiary R.I.s	(Via 771R) non-preferred route
	G	N. 230 Signal	P.L.S.	(Via 771R) non-preferred route
	H	N. 130 Signal	M.A. with "1" R.I.	
	I	N. 130 Signal	P.L.S.	
N. 430	A	N. 434 Signal	M.A./D.Y.	
	B	N. 434 Signal	P.L.S.	
N. 528	A	N. 430 Signal	M.A. with "4" R.I.	
	B	W. 8 Signal	P.L.S.	
	C	N. 230 Signal	M.A. with "2" R.I.	
	D	N. 230 Signal	P.L.S.	
	E	N. 130 Signal	M.A. with "1" R.I.	
	F	N. 130 Signal	P.L.S.	
	G	Platform Siding	P.L.S. with "S" R.I.	
N. 628	A	N. 430 Signal	M.A. with "4" R.I.	
	B	N. 430 Signal	P.L.S.	
	C	N. 230 Signal	M.A. with "2" R.I.	
	D	N. 230 Signal	P.L.S.	

GAER INTERLOCKING AREA

G. 1	A	N. 317 Signal	M.A.	
	B	Up Waterloo Loop	P.L.S.	Slotted by W.L. 15
G. 2		N. 336 Signal	P.L.G.S.	
G. 3	A	N. 317 Signal	P.L.G.S.	
	B	G. 5 Signal	P.L.G.S.	Slotted by W.L. 18
	C	Down Waterloo Loop	P.L.G.S.	Slotted by W.L. 18
G. 4		N. 438 Signal	Slot on W.L. 41	
G. 5		N. 317 Signal	Slot on W.L. 22	
G. 6		B.10 Signal	Slot on W.L. 8	
G. 7	A	N. 119 Signal	M.A. with "1" R.I.	
	B	N. 319 Signal	M.A. with "3" main and "1" subsidiary R.I.s	(Via 787R) non-preferred route

Signal No.	Route	Destination	Type of Signal	Notes
G. 7 *continued*	C	N. 319 Signal	M.A. with "3" main and "2" subsidiary R.I.s	(Via 794R) preferred route
G. 8		N. 438 Signal	Slot on W.L. 30	
G. 10	C	B. 10 Signal	Slot on W.L. 13	
	D	N. 438 Signal	Slot on W.L. 13	
	E	L.O.S. (Up Relief)	Slot on W.L. 13	
N. 115	A	N. 119 Signal	M.A.	
	B	N. 319 Signal	M.A. with pos. 6 Jn. I.	(Via 787R) non-preferred route
	C	N. 219 Signal	M.A. with pos. 4 Jn. I.	
	D	N. 319 Signal	M.A. with pos. 5 Jn. I.	(Via 794R) preferred route
N. 119		N. 123 Signal	M.A.	
N. 134		PJ. 85 Signal	M.A.	
N. 219		N. 223 Signal	M.A.	
N. 234	A	N. 336 Signal	M.A. with pos. 1 Jn. I.	
	B	N. 236 Signal	M.A.	
	C	PJ. 85 Signal	M.A. with pos. 4 Jn. I.	
N. 236		N. 240 Signal	M.A./D.Y.	
N. 315	A	N. 317 Signal	M.A.	
	B	Up Waterloo Loop	M.A.	Slotted by W.L. 36
	C	G. 5 Signal	P.L.S.	Slotted by W.L. 21
N. 317	A	N. 219 Signal	M.A. with pos. 1 Jn. I.	
	B	N. 319 Signal	M.A.	
N. 319		N. 323 Signal	M.A./D.Y.	
N. 336	A	G. 10 Signal	P.L.S.	Slotted by W.L. 14
	B	N. 438 Signal	M.A.	
N. 434	A	N. 436 Signal	M.A./D.Y.	
	B	N. 236 Signal	M.A. with pos. 4 Jn. I.	(Via 792R) preferred route
	C	N. 236 Signal	M.A. with pos. 5 Jn. I.	(Via 786R) non-preferred route
	D	PJ. 85 Signal	M.A. with pos. 6 Jn. I.	
N. 436	A	Down Waterloo Loop	P.L.S. with "D.W." R.I.	Slotted by W.L. 31
	B	N. 438 Signal	M.A./D.Y.	
N. 438	A	B. 10 Signal	M.A./D.A. with pos. 1 Jn. I.	
	B	N. 440 Signal	M.A./D.Y.	
N. 515		N. 517 Signal	Slot on P.J. 6/18	
N. 517	A	N. 119 Signal	M.A.	
	B	N. 319 Signal	M.A. with pos. 4 Jn. I.	

Signal No.	Route	Destination	Type of Signal	Notes
B. 1		B. 5 Signal	P.L.G.S.	
B. 2	A	Carriage Road 2	P.L.G.S.	Requires acceptance release
	B	Outgoing Engine Shed Road	P.L.G.S.	Via 810N
	C	Ingoing Engine Line	P.L.G.S.	
B. 3	A	N. 113 Signal	P.L.G.S.	
	B	N. 313 Signal	P.L.G.S.	
	C	B. 5 Signal	P.L.G.S.	
B. 4	A	N. 242 Signal	P.L.G.S.	
	B	Carriage Road 2	P.L.G.S.	Requires acceptance release
	C	Outgoing Engine Shed Road	P.L.G.S.	
B. 5	A	L.O.S. (Down Cardiff Curve)	P.L.G.S.	Requires P.J. acceptance
	B	G. 3 Signal	P.L.G.S.	
	C	G. 1 Signal	P.L.G.S.	
	D	Yard	P.L.G.S.	
B. 6	A	N. 242 Signal	P.L.G.S.	
	B	Carriage Road 2	P.L.G.S.	Requires acceptance release
	C	Outgoing Engine Shed Road	P.L.G.S.	
B. 7		N. 113 Signal	P.L.G.S.	
B. 8	A	Carriage Road 1	P.L.G.S.	
	B	Carriage Road 2	P.L.G.S.	Requires acceptance release
	C	Ingoing Engine Shed Road	P.L.G.S.	
B. 9	A	G. 1 Signal	P.L.G.S.	
	B	Yard	P.L.G.S.	
B. 10	A	Spur	P.L.S. with "S" R.I.	
	B	N. 442 Signal	M.A.	
	C	N. 442 Signal	P.L.S.	
	D	L.O.S. (Up Rlf.)	P.L.S.	
B. 11		B. 15 Signal	P.L.G.S.	
B. 12	A	Spur	P.L.G.S.	
	B	N. 442 Signal	P.L.G.S.	
	C	L.O.S. (Up Relief)	P.L.G.S.	
B. 13	A	B. 15 Signal	P.L.G.S.	
	B	L.O.S. (Carriage Road 1)	P.L.G.S.	
B. 15	A	N. 015 Signal	M.A./D.A. with "5" R.I.	
	B	L.O.S. (Down Cardiff Curve)	P.L.S.	Requires P.J. acceptance
B. 15	C	G. 7 Signal	M.A./D.A. with "G" R.I.	
	D	N. 115 Signal	M.A. with "1" R.I.	
B. 17		N. 015 Signal	P.L.G.S.	
N. 015		Up Cardiff Curve	Slot on P.J. 81	

Gaer Interlocking Area—continued

Signal No.	Route	Destination	Type of Signal	Notes
G. 7 *continued*	C	N. 319 Signal	M.A. with "3" main and "2" subsidiary R.I.s	(Via 794R) preferred route
G. 8		N. 438 Signal	Slot on W.L. 30	
G. 10	C	B. 10 Signal	Slot on W.L. 13	
	D	N. 438 Signal	Slot on W.L. 13	
	E	L.O.S. (Up Relief)	Slot on W.L. 13	
N. 115	A	N. 119 Signal	M.A.	
	B	N. 319 Signal	M.A. with pos. 6 Jn. I.	(Via 787R) non-preferred route
	C	N. 219 Signal	M.A. with pos. 4 Jn. I.	
	D	N. 319 Signal	M.A. with pos. 5 Jn. I.	(Via 794R) preferred route
N. 119		N. 123 Signal	M.A.	
N. 134		PJ. 85 Signal	M.A.	
N. 219		N. 223 Signal	M.A.	
N. 234	A	N. 336 Signal	M.A. with pos. 1 Jn. I.	
	B	N. 236 Signal	M.A.	
	C	PJ. 85 Signal	M.A. with pos. 4 Jn. I.	
N. 236		N. 240 Signal	M.A./D.Y.	
N. 315	A	N. 317 Signal	M.A.	
	B	Up Waterloo Loop	M.A.	Slotted by W.L. 36
	C	G. 5 Signal	P.L.S.	Slotted by W.L. 21
N. 317	A	N. 219 Signal	M.A. with pos. 1 Jn. I.	
	B	N. 319 Signal	M.A.	
N. 319		N. 323 Signal	M.A./D.Y.	
N. 336	A	G. 10 Signal	P.L.S.	Slotted by W.L. 14
	B	N. 438 Signal	M.A.	
N. 434	A	N. 436 Signal	M.A./D.Y.	
	B	N. 236 Signal	M.A. with pos. 4 Jn. I.	(Via 792R) preferred route
	C	N. 236 Signal	M.A. with pos. 5 Jn. I.	(Via 786R) non-preferred route
	D	PJ. 85 Signal	M.A. with pos. 6 Jn. I.	
N. 436	A	Down Waterloo Loop	P.L.S. with "D.W." R.I.	Slotted by W.L. 31
	B	N. 438 Signal	M.A./D.Y.	
N. 438	A	B. 10 Signal	M.A./D.A. with pos. 1 Jn. I.	
	B	N. 440 Signal	M.A./D.Y.	
N. 515		N. 517 Signal	Slot on P.J. 6/18	
N. 517	A	N. 119 Signal	M.A.	
	B	N. 319 Signal	M.A. with pos. 4 Jn. I.	

EBBW INTERLOCKING AREA

Signal No.	Route	Destination	Type of Signal	Notes
B. 1		B. 5 Signal	P.L.G.S.	
B. 2	A	Carriage Road 2	P.L.G.S.	Requires acceptance release
	B	Outgoing Engine Shed Road	P.L.G.S.	Via 810N
	C	Ingoing Engine Line	P.L.G.S.	
B. 3	A	N. 113 Signal	P.L.G.S.	
	B	N. 313 Signal	P.L.G.S.	
	C	B. 5 Signal	P.L.G.S.	
B. 4	A	N. 242 Signal	P.L.G.S.	
	B	Carriage Road 2	P.L.G.S.	Requires acceptance release
	C	Outgoing Engine Shed Road	P.L.G.S.	
B. 5	A	L.O.S. (Down Cardiff Curve)	P.L.G.S.	Requires P.J. acceptance
	B	G. 3 Signal	P.L.G.S.	
	C	G. 1 Signal	P.L.G.S.	
	D	Yard	P.L.G.S.	
B. 6	A	N. 242 Signal	P.L.G.S.	
	B	Carriage Road 2	P.L.G.S.	Requires acceptance release
	C	Outgoing Engine Shed Road	P.L.G.S.	
B. 7		N. 113 Signal	P.L.G.S.	
B. 8	A	Carriage Road 1	P.L.G.S.	
	B	Carriage Road 2	P.L.G.S.	Requires acceptance release
	C	Ingoing Engine Shed Road	P.L.G.S.	
B. 9	A	G. 1 Signal	P.L.G.S.	
	B	Yard	P.L.G.S.	
B. 10	A	Spur	P.L.S. with "S" R.I.	
	B	N. 442 Signal	M.A.	
	C	N. 442 Signal	P.L.S.	
	D	L.O.S. (Up Rlf.)	P.L.S.	
B. 11		B. 15 Signal	P.L.G.S.	
B. 12	A	Spur	P.L.G.S.	
	B	N. 442 Signal	P.L.G.S.	
	C	L.O.S. (Up Relief)	P.L.G.S.	
B. 13	A	B. 15 Signal	P.L.G.S.	
	B	L.O.S. (Carriage Road 1)	P.L.G.S.	
B. 15	A	N. 015 Signal	M.A./D.A. with "5" R.I.	
	B	L.O.S. (Down Cardiff Curve)	P.L.S.	Requires P.J. acceptance
B. 15	C	G. 7 Signal	M.A./D.A. with "G" R.I.	
	D	N. 115 Signal	M.A. with "1" R.I.	
B. 17		N. 015 Signal	P.L.G.S.	
N. 015		Up Cardiff Curve	Slot on P.J. 81	

Ebbw Interlocking Area—continued

Signal No.	Route	Destination	Type of Signal	Notes
N. 111	A	N. 113 Signal	M.A.	
	B	N. 313 Signal	M.A. with pos. 4 Jn. I.	
	C	G. 1 Signal	M.A./D.A. with pos. 5 Jn. I.	
	D	B. 3 Signal	P.L.S.	
N. 113	A	N. 015 Signal	M.A./D.A. with pos. 2 Jn. I.	
	B	G. 7 Signal	M.A./D.A. with pos. 1 Jn. I.	
	C	N. 115 Signal	M.A.	
N. 240	A	N. 442 Signal	M.A. with pos. 1 Jn. I.	
	B	N. 242 Signal	M.A.	
	C	Carriage Road 1	P.L.S. with "C.1" R.I.	
	D	Carriage Road 2	P.L.S. with "C.2" R.I.	Requires acceptance release
	E	Ingoing Engine Shed Road	P.L.S. with "L" R.I.	
N. 242	A	N. 244 Signal	M.A.	
	B	N. 244 Signal	P.L.S.	
N. 244		D.M. 161A Signal	M.A.	
N. 309		N. 311 Signal	M.A./D.Y.	
N. 311	A	N. 113 Signal	M.A. with pos. 1 Jn. I.	
	B	N. 313 Signal	M.A.	
	C	G. 1 Signal	M.A./D.A. with pos. 4 Jn. I.	
	D	B. 3 Signal	P.L.S.	
N. 313		N. 315 Signal	M.A./D.Y.	
N. 440		N. 442 Signal	M.A.	
N. 442	A	DR. 160 Signal	M.A.	
	B	N. 244 Signal	M.A. with pos. 4 Jn. I.	
N. 638		N. 640 Signal	Slot on P.J. 16	
N. 640	A	N. 442 Signal	M.A. with pos. 1 Jn. I.	
	B	N. 242 Signal	M.A.	
	C	Carriage Road 1	P.L.S. with "C.1" R.I.	
	D	Carriage Road 2	P.L.S. with "C.2" R.I.	Requires acceptance release
	E	Ingoing Engine Shed Road	P.L.S. with "L" R.I.	
	F	Ingoing Engine Line	P.L.S. with "E" R.I.	

Appendix "C"

LIST OF ALTERNATIVE ROUTES

(See Section D (4) of "Description and Method of Operation of Newport Signalling Control Panel".)

Signal No.	Destination	Preferred Route	Alternative Route	Points to be locked to select alternative route
N. 124	N. 226 Signal	J. via 754R	G. via 745R	745R
N. 124	N. 126 Signal	K. via 745N	H. via 745R, 753R	745R
N. 227	N. 129 Signal	A. via 754R	C. via 745R	745R
N. 327	N. 129 Signal	A. via 750 R	C. via 746R	750N
N. 527	N. 129 Signal	A or B via 751N	E or F via 746R 751R	751R
N. 428	N. 230 Signal	C or D via 768R	F or G via 771R	771R
G. 7	N. 319 Signal	C. via 794R	B. via 794N	794N
N. 115	N. 319 Signal	D. via 794R	B. via 794N	794N
N. 434	N. 236 Signal	B. via 792R	C. via 786R	786R

Appendix "D"

RESTORED POINTS

(See Section C (2) of "Description and Method of Operation of Newport Signalling Control Panel".)

Nos.	703	749	778
	711	756	810
	712	765	812
	713	769	814
	723	776	815
	741	777	827

Appendix "E"

Facing Points held by Track Circuits on the approach side of the protecting signal.

(See Section C (6) of " Description and Method of Operation of Newport Signalling Control Panel".)

Nos.	703	753	786
	708	754	792
	718	755	794
	719	756	795
	720	758	796
	721	768	802
	722	771	803
	723	773	805
	724	774	811
	732	775	812
	735	776	821
	745	777	824
	746	778	830
	750	779	831
	751	780	

Appendix "F"

LIST OF OVERLAPS

In the area in the centre of the panel, the indication of overlaps by the usual dot would be confusing owing to the large number of alternative overlaps. Reference should therefore be made to the following table when the overlap is not indicated on the panel.

Destination Signal	Overlap up to and including track circuit
N. 031	(M) DL.
N. 033	(L) EF.
N. 035	(L) BE. or (L) DH.
N. 111	(B) DT. or (B) CG.
N. 113	(B) DY. or (B) GL.
N. 115	(G) DE.
N. 119	(G) DK.
N. 123	(W) DG. or (W) CD. or (W) FG. or (W) BE.
N. 124	(E) DK. or (E) CE. or (E) BE.
N. 125	(E) DE. or (E) CK.
N. 126	(E) DD. or (E) CK.
N. 127	(E) DJ. or (E) CF.
N. 128	(W) DF. or (W) CE.
N. 129	(M) DG. or (M) GG. or [(M) DF. with 722R, 724R.]

List of Overlaps—continued

Destination Signal	Overlap up to and including track circuit
N. 130	(W) DD.
N. 131	(M) DL.
N. 133	(U) DE.
N. 134	(G) DH.
N. 135	(U) DG.
N. 214	(U) CE.
N. 218	(U) CG.
N. 219	(G) CC.
N. 220	(M) CG. or (M) FF.
N. 222	(M) CL. or (M) AG.
N. 223	(W) CD. or (W) DG. or (W) FG. or (W) BE. or (W) AC.
N. 224	(E) CE. or (E) BE.
N. 225	(E) CJ. or (E) DF.
N. 226	(E) CK. or (E) DD.
N. 227	(E) CF. or (E) DJ.
N. 228	(W) CE. or (W) DF.
N. 229	(M) DG. or (M) CJ. or (M) DF.
N. 230	(W) CH.
N. 234	(G) CE.
N. 236	(G) CG. or (G) DE.
N. 240	(B) CC. or (B) FL.
N. 311	(B) BR.
N. 313	(B) BV.
N. 315	(G) BD. or (G) FM.
N. 317	(G) BG. or (G) CF.
N. 319	(G) BL.
N. 323	(W) BF. or (W) FG.
N. 327	(E) BD. or (E) DJ.
N. 329	(M) BE. or (M) DG.
N. 331	(M) BH.
N. 333	(U) BC.
N. 335	(U) BF. or (U) AJ.
N. 336	(G) BC. or (G) AH. or (G) FG.
N. 414	(U) AH.
N. 416	(U) AM. or (U) EE.
N. 418	(U) AP.
N. 420	(M) AD.
N. 422	(M) AF.
N. 424	(E) AC. or (E) EF.
N. 428	(W) AC. or (W) BE. or (W) FG.
N. 430	(W) AF.
N. 434	(G) AC or (G) BG. or (G) CE.
N. 436	(G) AE.
N. 438	(G) AL or (G) GH.
N. 440	(B) AA.
N. 517	(G) DG.
N. 527	(E) CF. or (E) BD. or (E) DJ.
N. 528	(W) FG. or (W) BE.
N. 535	(L) BE. or (L) AE.
N. 618	(L) AC. or (L) CC.
N. 620	(L) AJ. or (L) DE. or (L) BB. or (L) CH.
N. 622	(M) CL. or (M) DE.
N. 628	(W) AB.
N. 640	(B) CC. or (B) FL. or (B) GJ. or (B) DW.

Appendix "G"

POINT SETTING (RULE 78 (b))

The following are details of the switches or levers which must be placed in the position shown and a switch or lever collar placed on each switch or lever before a train is permitted to proceed under Rule 78 (*b*). Any points which fail to show the required "normal" or "reverse" indication must be secured by clip or scotch in the required position.

EAST USK INTERLOCKING AREA

Signal or Route	Points in Route		Points Protecting Route		Remarks
	Normal	Reverse	Normal	Reverse	
U. 2		702			
U. 4	708	709			
N. 135A	705				
N. 139					
N. 212					
N. 214A	704, 705	706, 707			
N. 214B	705, 706				
N. 333					
N. 335A	704, 707	705, 706			
N. 335B	704, 706, 707				
N. 335D	707	704	706		
N. 337					
N. 339A	703				
N. 339B		703			
N. 408					
N. 410	702		703		
N. 414	707		704		
N. 416A	709*	708			*For movement to No. 1 Siding only
N. 416B	708, 709				

MAINDEE MAIN INTERLOCKING AREA

M. 4A	714	711			
M. 4B		711, 714			
M. 8		722, 723	724		
N. 031A	715	717			
N. 031B	713	715, 717			
N. 031C		712, 713, 715, 717			
N. 129A		722, 723	724		
N. 129B	723, 724	722			
N. 129C	719, 720, 722		721, 723, 724		
N. 131A	715, 717		716		
N. 131C	713, 717	715	716		
N. 131D	717	712, 713, 715	716		
N. 133					
N. 218	714		715		
N. 220A	716				
N. 220B		716		717	

Signal or Route	Points in Route		Points Protecting Route		Remarks
	Normal	Reverse	Normal	Reverse	
N. 222A		718			
N. 222B	718, 719, 720, 721				
N. 229	719, 721	720		722	
N. 329A		719		721, 722	
N. 329B	718, 719				
N. 331A	713, 715		714		
N. 331B	715	712, 713	714		
N. 418					
N. 420A	711, 712, 714		713		
N. 420B	711, 712	714	713		
N. 422	718				
N. 622A	724	721		722	
N. 622B	723	722, 724			

MAINDEE NORTH INTERLOCKING AREA

L. 5A	736, 737				
L. 5C	735, 737, 738	736			
L. 6A	734				
L. 6B	735, 739	734	738		
L. 6C	738	734, 735, 736			
L. 7A		733			
L. 8		740			
N. 033	741				
N. 035A	735	737, 738		739	
N. 035B	735, 737	738	736	739	
N. 535A	735, 736, 738	737			
N. 535C	735, 736, 737, 738				
N. 537A	733				
N. 539					
N. 616					
N. 618A		732			
N. 618B	732				
N. 620A	734, 735, 740	739			
N. 620B	734, 735, 739		738		
N. 620C	734, 738	735, 736			

NEWPORT EAST INTERLOCKING AREA

N. 124A		745, 746, 747, 748	749		
N. 124C	748	745, 746, 747			
N. 124F	746, 751, 753	745, 752	750		
N. 124G	746, 752, 753, 754	745	750		
N. 124H	746, 754	745, 753	750		
N. 124J	745, 750, 753	754			
N. 124K	745, 750, 753, 754				

Newport East Interlocking Area—continued

Signal or Route	Points in Route		Points Protecting Route		Remarks
	Normal	Reverse	Normal	Reverse	
N. 125A	755, 756, 758				
N. 125B	756	755			
N. 126A		758	756		
N. 126B	755, 756, 758				
N. 127A	745, 750, 753, 754				
N. 127D	745, 746, 754	753	750		
N. 224A	745	746, 747, 748	749		
N. 224C	745, 748	746, 747			
N. 224F	745, 746, 751, 753	752	750		
N. 224G	745, 746, 752, 753, 754		750		
N. 224H	745, 746, 754	753	750		
N. 225A		758	756		
N. 225B	755, 758				
N. 226A	755, 758				
N. 226B	756	755			
N. 227A	745, 750, 753	754			
N. 227C	746, 752, 753, 754	745	750		
N. 227E	745, 746, 752, 753, 754		750		
N. 327A	745, 751	750			
N. 327C	747, 750, 751	745, 746			
N. 327F	746, 747, 750, 751				
N. 424A	747	748	749		
N. 424C	747, 748				
N. 527A	746, 751, 753	745, 752	750		
N. 527C	745, 746, 751, 753	752	750		
N. 527E	747, 750	745, 746, 751			
N. 527G	746, 747, 750	751			
N. 627A		745, 746, 747, 748	749		
N. 627D	746	747, 748	749		

NEWPORT WEST INTERLOCKING AREA

W. 12B	768, 769, 770	766, 767	765		
W. 12D		766, 767, 768	765, 777		
N. 123A	774, 778, 779, 780				
N. 123B	774, 778	780			
N. 123D	772, 775, 776	774	777		
N. 123E	771	772, 774	777		

Newport West Interlocking Area—continued

Signal or Route	Points in Route		Points Protecting Route		Remarks
	Normal	Reverse	Normal	Reverse	
N. 128A	768, 773, 777	779	774, 778		
N. 128C	774, 778, 779, 780				
N. 130					
N. 223A	768, 773, 777	779	774, 778		
N. 223B	768, 773, 777, 779, 780		774		
N. 223D	768, 772, 774, 775, 776	773	777		
N. 223E	768, 771, 774	772, 773	777		
N. 223G		766, 767, 768	765, 777		
N. 228A	768, 773, 777, 779, 780		774		
N. 228C	774, 778	780			
N. 230A					
N. 323A	770, 776	775	768		
N. 323C	770, 771, 772, 775		768		
N. 428A	767, 768, 769, 770, 771		766		
N. 428C	767, 771	768	766, 777		
N. 428F	768, 774	771, 772, 773	777		
N. 428H		771, 772, 774	777		
N. 430A					
N. 528A	776	770, 775	768, 769		
N. 528C	768, 772, 774, 775, 776	773	777		
N. 528E	772, 775, 776	774	777		
N. 628A	766, 768, 769, 770	767			
N. 628C	766	767, 768	777		

GAER INTERLOCKING AREA

G. 1	800, 804	802, 803	799, 805 [(W.L.) 5]*		*Not indicated in Newport Signal Box
G. 4	798 [(W.L.) 19]*	799, 800			
G. 7A	787, 789, 794 [(G.F.) 785]	795	788		
G. 7B	789, 794	787, 795	788		
G. 7C	787, 792	793, 794, 795	786, 796		
N. 115A	787, 789, 794, 795 [(G.F.) 785]		788		
N. 115B	789, 794, 795	787	788		

Gaer Interlocking Area—continued

Signal or Route	Points in Route		Points Protecting Route		Remarks
	Normal	Reverse	Normal	Reverse	
N. 115C	786, 788, 793, 795, 796 [(G.F.) 785]	794	787		
N. 115D	787, 792, 795	793, 794	786, 796		
N. 119					
N. 134	787 [(G.F.) 785]	789, 790			
N. 219					
N. 234A	786, 788 [(G.F.) 785] [(G.F.) 806]	796	787, 793		
N. 234B	786, 788, 793, 796 [(G.F.) 785]		787		
N. 234C	786, 790 [(G.F.) 785]	788	787	789	
N. 236	794				
N. 315A	803, 805 [(G.F.) 806]		804		
N. 315B	804 [(W.L.) 19]*	805	798		* Not indicated in Newport Signal Box
N. 317A	786, 788 [(G.F.) 785]	796	787, 793		
N. 317B	787, 792, 793, 796		786		
N. 319					
N. 336B	800, 804	803	799, 805		
N. 434A	786, 792				
N. 434B	786	792, 793	796		
N. 434C	788, 793, 796	786			
N. 434D	790	786, 788	[(G.F.) 785]	789	
N. 436B	798, 800, 803 [(G.F.) 806]		799, 804, 805		
N. 438A		802	[(W.L.) 5]*		* Not indicated in Newport Signal Box
N. 438B	802				
N. 515					
N. 517A	787, 790 [(G.F.) 785]	789			
N. 517B	790	787, 789			

EBBW INTERLOCKING AREA

B. 10B	823, 826, 828	827			
B. 15A	810, 811, 812, 820, 824	814			
B. 15C		819, 820	822, 824		
B. 15D	819	820	822, 824		

Ebbw Interlocking Area—continued

Signal or Route	Points in Route		Points Protecting Route		Remarks
	Normal	Reverse	Normal	Reverse	
N. 111A	825, 829, 830				
N. 111B	823, 825, 828	830			
N. 111C	823, 826	827, 828, 830	825		
N. 113A	810, 811, 812	824	814, 815, 819, 820, 821		
N. 113B	820, 824	819	821, 822		
N. 113C	819, 820, 824		821, 822		
N. 240A	821, 822, 828	823	827		
N. 240B	821, 822, 823, 825, 829				
N. 240C	816	821	817, 822, 824		
N. 240D	817	816, 821	813, 822, 824		
N. 240E		816, 817, 821	813, 822, 824		
N. 242A	830, 831				
N. 309					
N. 311A	828, 830, 831	825			
N. 311B	823, 825, 828, 830, 831				
N. 311C	823, 826, 830 831	827, 828	825		
N. 313					
N. 440	823, 827, 828				
N. 442A	831				
N. 442B		831			
N. 638					
N. 640A	811, 828	822, 823	815, 819, 820, 821, 827		
N. 640B	811, 823, 825, 829	822	815, 819, 820, 821		
N. 640C	811, 816, 821, 822	815	817, 820, 824		
N. 640D	811, 817, 821, 822	815, 816	813, 820, 824		
N. 640E	811, 821, 822	815, 816, 817	813, 820, 824		
N. 640F	814, 824	811, 812			

EAST USK & WATERLOO LOOP SIGNAL BOXES

Signals Controlled by two Boxes

(1) Certain signals are jointly controlled by Newport Panel and the above Signal Boxes. Those which are so controlled are described as such on the signal box diagram and the lever leads, and the necessary signal and slot indicators are provided.

Points Controlled by two Boxes

(2) Certain points are jointly controlled by Newport Panel and the above Signal Boxes. For these points the lever provided is an interlocking lever which performs the required mechanical interlocking, but does not operate the points. These are operated by electrical point machines from Newport Control Panel, but the points can only be set reverse when the interlocking lever is reverse, and the interlocking lever cannot be replaced normal until the points are set and detected normal.

Interlocking Levers

The interlocking lever may also be locked normal and reverse by the occupation of certain track circuits. "Normal" and "Free" indicators for each of these interlocking levers are provided.

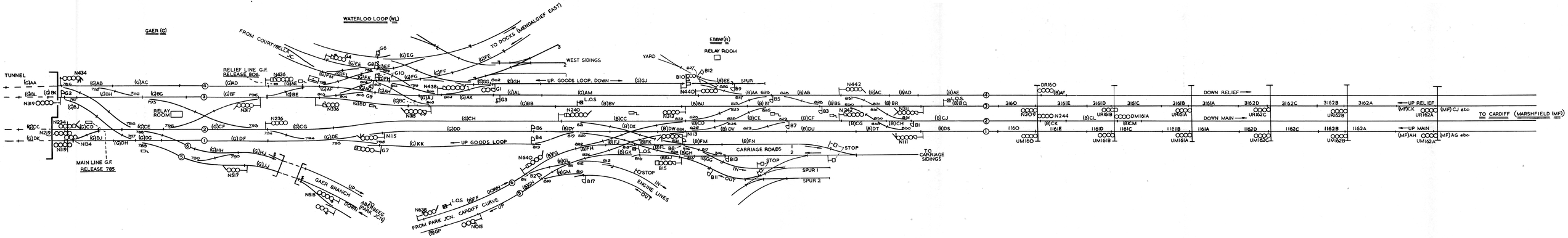
Method of Working

(3) When it is required to make a movement over these points, i.e. a movement into or from the Newport Panel control area, permission for the movement must first be obtained from, or given to, the Newport Signalman. The appropriate point, interlocking and signal or slot levers may then be pulled.

When an interlocking lever is reversed, an indication is illuminated on the Newport Signalman's control panel to inform him that he may set up the appropriate route, and so reverse the dual controlled points, and the appropriate signal will then clear when conditions are correct for it to do so.

When the movement is completed, the Newport Signalman will set normal the dual controlled points. When these have been set and detected normal, the normal and the free indications on the block shelf above the interlocking lever will be illuminated and the interlocking lever must then be restored to its normal position.


FROM PADDINGTON
(MAGOR)
FROM STEELWORKS WEST
EAST USK BRANCH
EAST USK JCN
RELAY ROOM
SPUR
DOWN SIDINGS
RECEPTION SIDINGS
RELIEF
MAIN
UP
DOWN
MAINDEE MAIN (M)
MAINDEE DEPOT
MAINDEE LOOP
MAINDEE NORTH (L)
CAERLEON WORKS SDG
CAERLEON
GROUND FRAMES
NORTH - SOUTH
G.F. RELEASE
FROM HEREFORD (LLANTARNAM JCN)
UP HEREFORD GOODS
SIGNAL BOX
SIDINGS
STATION
BAY
NEWPORT EAST (E)
NEWPORT WEST (W)
MIDDLE SIDINGS
GOODS YARD
GOODS YARD SHUNTING SPURS
CARRIAGE SIDINGS
LOADING BANK SIDINGS
UP TUNNEL SDG


GAER (G)
WATERLOO LOOP (WL)
FROM COURTYBELLA JC
TO DOCKS (MENDALGIEF EAST)
EBBW (B)
RELAY ROOM
YARD
WEST SIDINGS
UP GOODS LOOP DOWN
TUNNEL
RELIEF LINE G.F. RELEASE 806
RELAY ROOM
MAIN LINE G.F. RELEASE 785
UP GOODS LOOP
CARRIAGE ROADS
STOP
IN
OUT
SPUR 1
SPUR 2
TO CARRIAGE SIDINGS
ENGINE LINES
GAER BRANCH UP
GAER BRANCH DOWN
TO ABERBEEG (PARK JCN.)
FROM PARK JCN. CARDIFF
CARDIFF DOWN
UP
L.O.S
DOWN RELIEF
DOWN MAIN
UP RELIEF
UP MAIN
TO CARDIFF (MARSHFIELD (MF))