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Network Information Book Middle Hunter Allandale (inc) to Singleton (inc) & Mt Thorley – Bulga – Wambo Branch Line

OGW-30-16

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Hunter Valley

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2.8	29 Sep 2023	Configuration Management Administrator	Corridor Assets & Operational Representatives	Configuration Manager	Head of Operations Standards

Amendment Record

Amendment Version #	Date Reviewed	Clause	Description of Amendment
1.0	24 Mar 2016		Initial issue
2.0	05 Sept 2017	Various	General Information sections updated including level crossings wayside equipment and drawing legend, Singleton text and diagram updated. Updated speed signs and safety interface agreement details added.

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2.1	5 Feb 2018		Cemetery Lane level crossing references updated
2.2	22 Nov 2018	1.3, 1.12, 1.15, 2.6	Level crossings table updated. Weighbridge details added to new section 1.12. Lookout Working Exclusions added to new section 1.15. Singleton Frame E operating details added. Speed board and Lookout Working updates to diagrams.
2.3	18 Feb 2019	1.15	Lookout working information amended in section 1.15 and diagrams as detailed in safe notice 2-4164
2.4	17 Apr 2020	1.6, 1.11, 1.16, 2.3	New Branxton wayside equipment added. Army Road crossing changes updated in section 1.6 and Whittingham and Saxonvale Junction diagrams. Corrections to Allandale, Greta, Singleton & Wambo diagrams. Drawing legend updated.
2.5	3 Nov 2020	1.13, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9 & 2.10	Ruling grades details updated. Mt Thorley branch line half pilot staff details removed. Minimbah, Whittingham, Singleton & Saxonvale Junction diagrams updated
2.6	23 Aug 2021	1.2, 1.6, 1.11, 1.16, 2.3, 2.5	Adjacent Train Control and Level Crossing information updated. Belford wayside equipment corrected. Drawing Legend updated. Whittingham diagram updated. Usage note added to all diagrams.
2.7	15 Jul 2022	1.1, 2.2, 2.3	Board Extent and Greta diagram updated. Branxton text and diagrams updated. Lochinvar diagram added.
2.8	29 Sep 2023	1.6, 1.8, 2.3, 2.5, 2.8, 2.10	Level Crossings table, Maximum Train Length, Branxton, Whittingham, Singleton, Bulga and Wambo diagrams updated.

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1 General Information

1.1 Board Extent

Allandale inclusive Down Main signal AE71DM (203.298km), Up Main signal AE73UM (203.298km), Up Relief signal *UR204.2* (204.138km) to Singleton (inclusive) Down Main signal 149.7 (241.002km) and Up Main signal 150.4 (241.590km)

Mt Thorley - Saxonvale (Bulga) - Wambo Branch lines (inclusive)

This area is controlled by Middle Hunter Network Controller, Network Control Centre North (NCCN).

Contact Numbers:

Phone:	(02) 4902 7908
Train Transit Manager:	(02) 4902 9410
Emergency:	(02) 4902 7968

NOTE: For work between Maitland and Allandale over the up and down mains and up relief, both Lower Hunter and Middle Hunter Network Controllers will be affected between the following signals:

- Down Main between Maitland D195.3D and Allandale AE71DM signal
- Up Main between Maitland MD310UM signal and Allandale AE73UM signal
- Up Relief between Maitland MD312UR signal and Allandale UR204.2 signal.

1.2 Adjacent Train Control Boards / Centres

ARTC Lower Hunter	(02) 4902 7909	Emergency (02) 4902 7969
ARTC Upper Hunter 1	(02) 4902 7910	Emergency (02) 4902 7970
Pacific National	(02) 4052 5001	
Greta Train Facility		

1.3 Safe Working System

Rail Vehicle Detection (RVD)						
Bi-Directional Signalling	Up and Down Mains Maitland to Whittingham					
Uni-Directional Signalling	Relief Roads, Whittingham to Branxton and Greta to Farley					
Single Line Bi-directional Signalling	Whittingham to Saxonvale Junction					
	Saxonvale Junction to Saxonvale (Bulga)					
	Saxonvale Junction to Mt Thorley					
	Mt Thorley to Wambo					

1.4 Applicable Rules

The ARTC Network Rules and Procedures apply to the sections covered by this Information Book.

1.5 Section Operating Equipment / Notes

1.5.1 Motorised Point Machines

Some of the motorised points in this area are Swingnose points – EXTREME CAUTION must be exercised if points are being manually operated to ensure ALL parts of the turnout are wound, and to ensure that the whole route through the turnout is set correctly.

NOTE: If there are 4 keys in EOL box there are 4 sets of points to wind.

Allandale	Minimbah	Mt Thorley	
No 102 Points	No 160 Points	No 28 Points	
No 104 Points	No 161 Points		
Greta	Whittingham	Singleton	
No 112 Points	No 200 Points	No 59 Points	
No 117 Points	No 201 Points	E Frame No 67 Points	
No 119 Points	No 202 Points		
Branxton	No 203 Points		
No 120 Points	No 204 Points		
No 122 Points	No 206 Points		
No 125 Points			

NOTE: E-Frame Singleton includes derailer on siding.

NOTE: No 29 Points Wambo are Tangential points - crew may not operate in the event of failure



1.5.2 Interlockings and Sidings

Km	Station, Platform, Interlocking or Siding	Length of Passenger Platform in Metres	Platform Address	Additional Information
202.628	Lochinvar Platform		Station Lane	Bi-directional signalling, advise
	No1 Platform Up Main	50 metres	Lochinvar NSW	Maitland CCTV before placing
	No2 Platform Up Main	50 metres		platform
204.500	Allandale			Crossovers
210.808	Greta Platform		Nelson Street	Bi-directional signalling, advise
	No 1 Up Main	23.5 metres	Greta NSW	Maitland CCTV before placing passenger train on opposite
	No 2 Down Main	23.5 metres		platform
212.248	Greta Train Support			Entry on Down Main
	Facility			Exit on Down Main
215.554	Branxton Platform		Railway Street	Bi-directional signalling, advise
	No 1 Up Main	121 metres	Branxton NSW	Maitland CCTV before placing passenger train on opposite
	No 2 Down Main	121 metres		platform
215.245	Branxton			Crossovers
215.707	Branxton			Siding
226.095	Minimbah			Crossovers
234.250	Whittingham			Interlocking
238.885	Singleton Platform Up Main Only	240 metres	Munro Street Singleton NSW	Interlocking, siding and yard
241.936	Saxonvale Junction			Junction
249.250	Bulga (Saxonvale) Colliery			Coal Loop Fits 2 trains. 1 Loaded past Bin and 1 empty
244.312	Mt Thorley Colliery			Coal Loop Fits 2 trains. 1 Loaded past Bin and 1 empty
244.312	Warkworth Colliery			Coal Loop Fits 2 trains. 1 Loaded past Bin and 1 empty
257.954	Wambo Colliery			Coal Loop Fits 2 trains. 1 Loaded past Bin and 1 empty



1.5.3 Singleton Yard Limits

Allandale Signals (AE71DM (203.298), AE73UM (203.298) and UR204.2 (204.138)) to Singleton Signals (149.7 & 150.4) and Whittingham (WM192B) is consolidated yard.

1.5.4 Sections

Sections exist between:

Maitland to Allandale

- Maitland MD266DM to Allandale AE71DM Down Main
- Allandale UR204.2 Up Relief to Maitland MD312UR
- Maitland MD310UM to Allandale AE73UM Up Main

Whittingham to Saxonvale Jct B150.5

Saxonvale Jct B150.5 to Saxonvale

Saxonvale Jct B150.5 to Mt Thorley B151.1

Mt Thorley B151.1 to Wambo

1.5.5 Local Control Panels

Saxonvale Junction and Singleton

1.5.6 XYZ Keys Location

Allandale to Maitland	Allandale Signal Hut @ 204.500km
Branxton to Allandale	Branxton Signal Hut @ 215.245km
Minimbah to Branxton	Minimbah Signal Hut @ 226.000km
Whittingham to Minimbah	Whittingham Signal Hut @ 234.400km

Removing an X, Y or Z key (maintenance releasing switch key) from its cabinet allows signals to clear only in the standard running-direction. It prevents bi-directional signalling.

1.6 Level Crossings

ALCAM ID is the number allocated from the Australian Level Crossing Assessment Model used by rail and road managers across Australia. It's a national database for assessing risk which is overseen by a National Committee and supported by the Rail Industry Safety Standards Board (RISSB).

ALCAM ID	Cerberus ID	Road Name	Line Segment	KM	Traffic Type	Access	Control Type
4367		Greta Takeoff	Main North	210.160			
	572	GTSF Service Road Greta	Main North	211.385	Road	Private	Flashing Lights & Bells
		Branxton Takeoff	Main North	215.710			
445	570	Cemetery Lane	Main North	236.383	Road	Public	Half Booms & Flashing Lights
3933		Singleton Lxing	Main North	237.358		Private	
1776	574	Army Road	Mt. Thorley Branch	237.338	Road	Public	Half Boom Flashing Lights - (duplicated)
3927		Whittingham Lxing	Mt. Thorley Branch	238.507	Road	Private	
3928		Whittingham Lxing	Mt. Thorley Branch	239.409	Road	Private	Stop Signs
3929		Whittingham Lxing	Mt. Thorley Branch	240.038	Road	Private	Stop Signs

Emergency keys for Cemetery Lane level crossing are held at Muswellbrook Provisioning Centre.

1.7 Maximum Permitted Speeds and Permanent Speed Restrictions

Refer the Route Access Standard - Heavy Haul Network Section Pages H1 for all speed information.

1.8 **Maximum Train Length**

The maximum train length is 1545m.

1.9 **Structure Clearances**

Refer Route Access Standards for Rolling Stock Outlines.

1.10 Communications

The National Train Communications System (NTCS) is the Primary communications system for the ARTC controlled rail network and is mandatory for all operators to operate their locomotives using a NTCS ICE (In-Cabin Equipment) Unit as the primary communications device.

A standard ICE unit is installed with the following components

- Telstra NextG[™] transceiver
- Iridium satellite transceiver
- UHF Radio
- GPS

The ICE unit primary communications is via the Telstra NextG[™] and backup communications is provided via the Iridium Satellite network. The ICE unit will automatically call the appropriate Network Control Centre (Broadmeadow or Junee) based on GPS location when the routine and emergency buttons are pressed.

The UHF radio is used for the Local train Radio - Train to Train and train to track Side communications.

UHF Local Train Radio (LTR) frequency details

Channel Name WB

Frequency: 450.050 MHz (UHF),

Bandwidth: 12.5 KHz,

EIRP: 41W (remote/low density areas), 8.3W (medium & high density areas)

Tx CTCSS: 173.8 Hz

Rx CTCSS: NA

Selcall: disabled

Channel Name Mountain Radio (WB)

Frequency: 450.050 MHz (UHF),

Bandwidth: 12.5 KHz,

EIRP: 41W (remote/low density areas), 8.3W (medium & high density areas)

Tx CTCSS: 103.5 Hz

Rx CTCSS: NA

Selcall: disabled

Alternate Communication for this section is by mobile or satellite phones.



1.11 Wayside Equipment

Branxton supersite wayside equipment located on Up Main line 215.900km.

WheelView, BrakeView, TruckView, CSCView & TrainView

Branxton - Minimbah (HBD, HWD, DED) Up Main and Up Relief lines 222.030km

HBD-Hot Bearing Detector

HWD-Hot Wheel Detector

DED-Dragging Equipment Detector

1.12 Weighbridges

Location	Km	Description
Branxton	215.700	Weighbridge located on Up Main. Weighbridge installed on proprietary IVES & VTRAS non-ballasted track slab. Consult Maitland RM Engineer and Wayside Technician prior to undertaking any work including tamping, grinding or welding.

1.13 Ruling Gradients

Down	1 in 66	
Up	1 in 77	

1.14 Curve and Gradient Data

For all Curve and Gradient data, refer to the ARTC Internet.

https://extranet.artc.com.au/eng_network-config_cd.html

1.15 Lookout Working Hazardous Areas

The below list of locations are hazardous for Lookout Working and may require an additional Lookout or a higher level of protection to undertake work in these areas.

The Protection Officer is responsible for conducting a safety assessment and confirming that Lookout Working is suitable for the work to be performed at the location. This may require the use of an additional Lookout to ensure adequate minimum warning time to easily reach a Safe Place. If the safety assessment determines that Lookout Working is not suitable a higher level of protection must be applied.

Area	KM From	КМ То	Line	Line Direction	Up/Down	Reason Unsuitable
Branxton - Minimbah	200.000	235.000	Up & Down Main	Bi-directional	Up & Down	Track geometry
Branxton - Whittingham	216.332	230.000	Up Relief	Uni-directional	Up	Track geometry
Whittingham - Singleton	235.000	238.900	Up Main	Uni-directional	Up	Track geometry
Whittingham - Singleton	235.500	237.000	Down Main	Uni-directional	Down	Sighting obstruction
Whittingham – Singleton	237.000	238.900	Down Main	Uni-directional	Down	Track geometry

1.16 Drawing Legend

	Standard gauge track		Dual gauge track
	Advisory Sign or Location Sign		Speed sign
	Pedestrian Crossing		Passive Protection Level Crossing
	Active Protection Level Crossing – Flashing Lights		Active Protection Level Crossing – Lights and Boom
	Bridge or Overpass		Underpass
$\frac{2}{2}$ $\frac{5}{5}$ $\frac{2}{2}$	River/Creek or Significant river bridge or Viaduct	Station Passenger Platform	Station or Platform
	Tunnel	<i>S</i>	Crossover
	Turnout	\rightarrow	Catchpoint
Y K	Derail	Manual Motorised	Points Operating Mechanism
	Point Indicator		Mechanical Frame
	Automatic Signals		Controlled Signals
	Dwarf Signals	4 109.128 km	Signal number reference
	Distant Signal		Repeater Signal
F1	Overheight Detectors	>> <<	Wayside Equipment

2.1 Allandale (AND)

General Arrangements

Allandale Yard is consolidated into the Singleton Yard Limits.

Operation of Points and Signals

The points and signals at Allandale are operated from Network Control Centre North.

All points worked from Network Control Centre North are controlled by track circuit and cannot be moved unless the track indicator diagram is showing that the track(s) controlling the points is unoccupied.

Yard Limits

Singleton YL/EYL (city end) is located at:

- AE71 (203.298km)
- AE73 (203.298km)
- UR204.2 (204.138km)

Country End YL/EYL Singleton Signals (149.7 & 150.4) and Whittingham (WM192B)

Maitland Yard Limits

The Maitland country end yard limits are located at:

- MD266 (195.415km)
- MD310 (197.136km)
- MD312 (197.116km)

Points

Point No	Location	Туре	Emergency Power Operation
102AB CD	204.330 km 204.480 km	A & D Tangential Swingnose	204.405km Equipment Hut Down Side
104AB	204.495 km	Swingnose	204.405km Equipment Hut

NOTE: Split Points Detection

The points detection on number 102 and 104 crossovers has been split so the points motors are detected independent of each other. Where the points on one track are not detected due to failure or points maintenance activities, the points detection will not be affected on the adjacent track.

Emergency Power Operation of Points

The points may be motor operated locally by the use of a push button panel located within the Emergency Power Operation (EPO) cabinet after authorisation is provided by the Network Controller. Located within the Emergency Power Operation (EPO) cabinet are two separate pushbuttons to locally operate the points, Local Control switches and Maintainers switches. The Local Control switches may be used by Qualified Workers and the Maintainers switches must only be used by Signals Maintenance Representatives.



The signals immediately protecting the points will have EPO indicators and EPO route indicators. The EPO indicators will display an indication when the Local Control pushbuttons (only) are operated, the points are detected for the applicable route and the rail traffic is occupying the approach track circuit of the applicable signal.

Note: All points are Swingnose and will require more than 1 end to be manually operated.

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2.2 Greta (GTA)

2.2.1 General Arrangements

Greta is within Branxton interlocking, and consolidated Singleton Yard Limits.

Greta station is two platforms outside the Main Lines – access to Down platform by overhead bridge.

Operation of Points and Signals

The points and signals at Greta are operated from Network Control Centre North.

All points worked from Network Control Centre North are controlled by track circuit and cannot be moved unless the track indicator diagram is showing that the track(s) controlling the points is unoccupied.

2.2.2 Pacific National Train Support Facility

The Greta Train Support Facility is located between 117 points at 211.027km and 119 points at 213.581km on the Down Main line. Entry and exit movements between the ARTC controlled network and the Pacific National controlled network (GTSF) is achieved by use of "slotting", dual-control on the GTSF entry signal BN89 and exit signal BN95.

A Type F active level crossing with 7 roadside flashing warning lights but no audible warning devices is located within the Greta Train Support Facility at 211.385km. A standard Type F level crossing track side sign with additional sign board stating 'ONLY ON SIDING' is located at 210.960km on the Down Main line.

Private Yard Isolation

An isolation switch panel will be located at the provisioning shed, having provision to isolate each road inside the Greta Train Support Facility and isolate (lock out) the Greta Train Support Facility from the mainline to prevent rail traffic movements into and/or out of the facility.

Refer to interface agreement IA1624 for further details.

2.2.3 Up Relief Line

The Up Relief line extends from Greta 209.820km to Farley 196.100km and is located on the up side of the Up Main.

The Up Relief is uni-directional signalled only.



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2.3 Branxton (BNX)

2.3.1 General Arrangements

Branxton is within consolidated Singleton Yard Limits.

Branxton station is two platforms outside the Main Lines – access to Down platform by overhead bridge.

Operation of Points and Signals

The points and signals at Branxton are operated from Network Control Centre North.

All points worked from Network Control Centre North are controlled by track circuit and cannot be moved unless the track indicator diagram is showing that the track(s) controlling the points is unoccupied.

Operation of Power-Operated Points in an Emergency

Nos. 117,119,112,120,122 and 125 points worked from Network Control Centre North are electrically power-operated.

If these points fail to operate correctly, the Network Controller must try to restore the points to their previous position to allow trains to continue running. However, if it is necessary to alter the route, the points may be manually operated.

Note: All points are Swingnose and will require more than 1 end to be manually operated.

The Signals maintenance representative must be promptly advised of the circumstances.

Ground Frames

Frame C

Frame C is located on the Down side at 215.707km of the Down siding adjacent to the crossover and provide access from the Down main line.

Frame C is unlocked by a key from releasing switch C, which is located adjacent to frame C.

Releasing switch C is electrically released by No. 123 lever in Network Control Centre North.

NOTE: No. 2 facing point lock lever in frame C must be returned to the normal position at all times to lock the points before any signal can be cleared.

A pushbutton unit is provided next to frame C to control Down siding to Down main shunting signal No. BN109 for movements in the Down direction from the Down siding to the Down main line.

Point indicators

Point indicators are provided on signals Nos. BN109 and BN110 to indicate when frame C points are set for a movement along the Down sidings, either from or to Rothbury Riot Railway.

The Down siding length is 250 metres from BN109 signal to the STOP block located at 215.402km.

X, Y, Z Maintenance Release Keys

X,Y,Z maintenance release keys are located on the Sydney end of the signalling relay room located at 215.245km on the Up side.

2.3.2 Aurizon Rolling Stock Condition Monitoring Equipment

Beena Vision train examining equipment is installed at 215.900km. Outer tag readers and wheel sensors are installed at 216.170km and 215.645km to activate and deactivate the system.

System Operation – Laser Safety

Laser based systems (WheelView, TruckView, TrainView and CSCView) are classified as Class 1M on the basis that personnel will be located outside the 3m Danger Zone during operation.

Passenger Rail Traffic

The Laser based system will be disabled from the Outer tag readers for all Passenger rail traffic movements.

Freight Rail Traffic

The Laser based system will not activate until the rail traffic lead locomotive power unit has passed clear of the equipment.

Where rail traffic is to pass on the Down Main line whilst the system is in operation, Rail Traffic Crews are not at risk from the Laser based system due to sufficient distance between Up and Down tracks for the lasers in operation. The nominal ocular hazard distance for the TrainView laser is 1.95m.

Rail Safety Workers are advised that a blue flashing light is mounted on one of the trackside control boxes to indicate the system is active.

Rail Traffic approaching the location on the Down Main line at night may see strobe flashes emitting from the BrakeView system.

2.3.3 Rothbury Riot Railway

General Arrangements

The Rothbury Riot Railway is a privately owned line and is an extension of the Down siding.

Gate

A locked gate is provided at the boundary of Rail Infrastructure Corporation property for when trains are required to proceed to or from the Rothbury Riot Railway.

Derail

A derail is located approximately 60 metres from the gate. The derail is secured on the line by a chain and a lock.

Interface Arrangements for Rothbury Riot Railway

All trains or track vehicles proceeding to the Rothbury Riot Railway must be stopped at signal No. BN109 until the derail is removed from the line and the gates have been secured in the open position.

All trains or track vehicles departing from the Rothbury Riot Railway must be stopped clear of the derail, and must not proceed until the derail is removed, the gates have been secured in the open position, and signal No. BN110 has been cleared.

Refer to interface agreement IA1636 for further details.

2.3.4 Up Relief

The Up Relief line extends from Whittingham 234.940 km to Branxton 216.320 km and is located on the up side of the Up Main.

The Up Relief is uni-directional signalled only.

2.3.5 Crew Relief Platform

There is a rail traffic crew relief platform at Black Creek designed for the purpose of safe and effective rail traffic crew changes.

The platform is located at:

Up direction – BN130UR signal at 217.033km

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Allandale (inc) to Singleton (inc) & Mt Thorley – Bulga – Wambo Branch Line

2.4 Minimbah (MBH)

General Arrangements

Minimbah is within consolidated Singleton Yard Limits.

Operation of Points and Signals

The points and signals at Minimbah are operated from Network Control Centre North.

All points worked from Network Control Centre North are controlled by track circuit and cannot be moved unless the track indicator diagram is showing that the track(s) controlling the points is unoccupied.

Operation of Power Operated Points in an Emergency

Nos. 160 and 161 points worked from Network Control Centre North are electrically poweroperated.

If these points fail to operate correctly, the Network Controller must try to restore the points to their previous position to allow trains to continue running. However, if it is necessary to alter the route, the points may be manually operated.

Note: All points are Swingnose and will require more than 1 end to be manually operated.

The Signals maintenance representative must be promptly advised of the circumstances.

X, Y, Z Maintenance Release Keys

X, Y, Z maintenance release keys are located on the wall of the Minimbah signalling relay room for the Branxton – Minimbah section.

Allandale (inc) to Singleton (inc) & Mt Thorley – Bulga – Wambo Branch Line

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Locations and Sections Information



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2.5 Whittingham (WHM)

General Arrangements

Whittingham is within consolidated Singleton Yard Limits.

Whittingham is the junction to the Mt Thorley branch and start of the Up Relief.

Operation of Points and Signals

The points and signals at Whittingham are operated from Network Control Centre North.

All points worked from Network Control Centre North are controlled by track circuit and cannot be moved unless the track indicator diagram is showing that the track(s) controlling the points is unoccupied.

Operation of Power Operated Points in an Emergency

All points worked from Network Control Centre North are electrically power-operated.

If these points fail to operate correctly, the Network Controller must try to restore the points to their previous position to allow trains to continue running. However, if it is necessary to alter the route, the points may be manually operated.

Note: All points are Swingnose and will require more than 1 end to be manually operated.

X, Y, Z Maintenance Release Keys

X, Y, Z maintenance release keys are located on the wall of the Whittingham signalling relay room for the Minimbah – Whittingham section at 234.400km.

Tonnage Signs Mt Thorley Branch Line & Up Main

Tonnage Signs (T Indicators) are found at:

- WM184U signal on the Up Main North line and
- WM182UB signal on the Up Mount Thorley branch line

T Indicators apply to turnout movements as follows:

WM184U T Indicator only applies to the Minimbah Bank tonnage signal D232.4U on the Down Main (Up direction). In the Up direction signal WM184U is able to display a Clear aspect in advance of the Up Main tonnage signal U232.4U.

WM182UB T Indicator only applies to the Minimbah Bank tonnage signal U232.4U on the Up Main. In the Up direction on the Down Main signal WM182UB is able to display a Clear aspect in advance on the Down Main tonnage signal D232.4U.

With a Sign attached:

"TONNAGE SIGNAL DRIVERS OF GOODS TRAIN WITH 75% OF FULL LOAD MUST WAIT HERE UNTIL SIGNAL SHOWS MEDIUM"

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Allandale (inc) to Singleton (inc) & Mt Thorley – Bulga – Wambo Branch Line

2.6 Singleton (SGL)

General Arrangements

Allandale to Singleton is within consolidated Singleton Yard Limits.

Yard Limits: Singleton signals149.7 & 150.4 signals and Whittingham WM192B to Allandale signals AE71DM (203.298), AE73UM (203.298) and UR204.2 (204.138).

Singleton station is a single platform outside the Up Main Line.

No.1 Down Siding	625 meters
No.2 Down Siding	536 metres
Up Goods Siding	362 metres
South Shunting Neck	343 metres
North Shunting Neck	125 metres
North Perway Siding	91 metres

Operation of Points and Signals

The points and signals at Singleton are operated from Network Control Centre North.

All points worked from Network Control Centre North are controlled by track circuit and cannot be moved unless the track(s) controlling the points is unoccupied.

Operation of Power Operated Points in an Emergency

Nos 55, 56, 57 and 59 points worked from the Network Control Centre North are electrically power operated.

If these points fail to operate correctly, a transit alarm will sound and the Network Controller must try to restore the points to their previous position to allow trains to continue running. However, if it is necessary to alter the route, the points may be manually operated.

Note: All points are Swingnose and will require more than 1 end to be manually operated.

The Signals maintenance representative must be promptly advised of the circumstances.

Ground Frames

Frame B

Frame B is located on the Down side of the South shunting neck adjacent to the crossover and provides access to the Down sidings.

Frame B is unlocked by a key from releasing switch B, which is electrically released by No. 63 release.

No. 3 lever in frame B controls shunting signals Nos. 43 and 46 for movements in the Down direction from the Down or the Up main line to the Down sidings.

No. 4 lever in frame B controls shunting signal No. 71 for movements from the Down sidings to the Up main line.

White control indicator lights are provided behind Nos. 3 and 4 levers in frame B to indicate when the corresponding control from Network Control Centre North Broadmeadow (No. 43, No. 46 or No. 71 lever) is available.



Lever C

Lever C is located on the Up side of the Up main line adjacent to the points and provides access to the Goods siding.

Lever C is unlocked by a key from releasing switch C, which is electrically released by No. 64 release.

Frame E

Frame E is located on the Down side of the Down main line adjacent to the crossover and provides access to No.1 Down siding.

Frame E is motorised Swingnose points and derailer controlled by push button panel, which is electrically released by No.67 release from NCCN.

Request Frame E release from Network Control and wait 60 seconds for RELEASE lamp to light.

Normal to Reverse

- 1. Turn switch to REVERSE
- 2. Ensure POINTS FREE and POINTS NORMAL lamps are lit
- 3. Press POINTS REVERSE P.B. until POINTS REVERSE lamp illuminates
- 4. Contact the Network Controller to set signals per below:

Signal 51 from Down Sidings to Down Main

Signal 78 from Down Main to Down Sidings

Signal 79 from Up Main to Down Sidings

Reverse to Normal

- 1. Ensure RELEASE and POINTS FREE lamps are lit
- 2. Press POINTS NORMAL P.B. until POINTS NORMAL lamp illuminates
- 3. Turn switch to NORMAL
- 4. POINTS FREE and POINTS NORMAL lamps will turn off
- 5. Contact the Network Controller to cancel Frame E release
- 6. RELEASE lamp will turn off

NOTE: 51 signal will not clear for movements from behind No.51 to North Neck / Perway Siding.

ARTC



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2.7 Saxonvale Junction (SXJ)

2.7.1 General Arrangements

Saxonvale Junction is the junction between the Saxonvale branch and Mt Thorley/Wambo branch.

The points and signals at Saxonvale Junction are operated from Network Control Centre North.

A local control panel is provided in the traffic hut at Saxonvale Junction to allow the interlocking to be operated locally. All indications displayed on the local control panel at Saxonvale Junction will also be displayed on the monitors in Network Control Centre North.

Operation of Points and Signals

No. 25 points worked from NCCN are controlled by track circuit and cannot be moved unless the track indicator diagram is showing that the track(s) controlling the points is unoccupied.

Switching the Control Panel in or out

A two-position key-locked switch is provided in the control panel to allow the signalbox to be switched in (local) or switched out (remote).

Direction switches

Direction switches (blue-coloured levers) are provided on the control panel at Saxonvale Junction for the Saxonvale Junction – Saxonvale, Saxonvale Junction – Mt Thorley sections and Mt Thorley – Wambo section.

• The signaller must ensure that the direction switch for each section is placed in either the Up or the Down position for the respective train movements.

Indicator lights inscribed "local control" and "Singleton" respectively are provided to indicate when the control panel is switched in or switched to remote control.

Operating Power Operated Points in an Emergency

No. 25 points and catchpoints are electrically power-operated.

If these points fail to operate correctly, the Network Controller must try to restore the points to their previous position to allow trains to continue running. However, if it is necessary to alter the route, the points may be manually operated.

The Signals maintenance representative must be promptly advised of the circumstances.

Warning: Two different types of ESML equipment are provided at Saxonvale Junction:

- the equipment provided in the box on the wall of the traffic hut is used to operate the 25C catchpoints in the Mt Thorley line
- the equipment provided in the box on the post near the traffic hut is used to operate No. 25A points and the 25B catchpoints in the Saxonvale line.

2.7.2 Special Instructions for No. 25 points and B153.6 signal

Operation of No. 25 points

No. 25 points consist of three ends, the turnout from the Mt Thorley line to the Saxonvale line and a set of catchpoints on both the Mt Thorley line and the Saxonvale line.

No. 25C catchpoints on Mt Thorley branch are normally closed.

Operation of B153.6 signal

The interlocking of Mt Thorley Up home/starting signal B153.6 permits the signal to be cleared when No. 25 points at Saxonvale Junction are placed in the reverse position. This allows a train consisting of 84 vehicles or more to proceed past B153.6 signal towards signal B150.6 to complete loading.

While No. 25 points are in the reverse position, trains to or from the Saxonvale line can be worked through while coal loading is taking place and the train is occupying the Mt. Thorley line.

2.7.3 Special Instructions for Isolating the Points Leading to the Saxonvale Branch Line for Maintenance Purposes

To prevent access to the Saxonvale branch line during maintenance work within the siding, a keylocked isolating switch is provided in a locked box to enable the power for No. 25 points to be isolated.

The key for the isolating switch box is held by the infrastructure maintainer for the area.

The isolating switch has two positions, "Normal Operating" and "Siding Isolated". The normal position for the switch is the "Normal Operating" position.

When the switch is locked in the "Normal Operating" position, the points can be operated normally. When the switch is locked in the "Siding Isolated" position, the power supply will be isolated and the points cannot be power-operated.

Points must be set for Mt Thorley before authorising Isolation to take place.



2.8 Saxonvale / Bulga Siding

General Arrangements

Saxonvale siding (known as Bulga coal) is located at the terminal end of the Saxonvale line.

Entry of Down trains into the arrival road is controlled by Down home Saxonvale mine signal S153.5 and the departure of Up trains from the Saxonvale departure road is controlled by Up home/starting Saxonvale mine signal S153.6.

Glencore trains (Freightliner) are able to fuel locos before loading.

Bin location 249.300 km approx.

Train may require signal S153.6 to be cleared to complete loading.

Two trains can fit into Bulga Coal Loop. The first has to be completely loaded before the second will fit in clear.

Note: If required and as long as loop is clear behind, a loaded train may set back in behind S153.6 to allow next down train to advance to mine from Whittingham.

Operation of Points and Signals

The points and signals controlling the entrance to and exit from Saxonvale siding are operated from NCCN.

Points worked from NCCN are controlled by track circuit and cannot be moved unless the track indicator diagram is showing that the track(s) controlling the points is unoccupied.

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Locations and Sections Information



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2.9 Mt Thorley Siding (MTT)

General Arrangements

Mt Thorley coal loop is located at the terminal end of the Mt Thorley branch line.

Entry of Down trains into the Mt Thorley branch line is indicated on B150.5 signal by a pulsating yellow indication to show that the route to Mt Thorley branch is set and a caution proceed indication is displayed on B151.1 signal.

Entry of Down trains into the Mt Thorley arrival road is controlled by Down home Mt Thorley signal B151.1

The departure of Up trains from the Mt Thorley departure road is controlled by Up home/starting Mt Thorley signal B153.6.

Trains are loaded from overhead bins located on the arrival road. Trains may be loaded from either loading bin No.1 (Warkworth), loading bin No.2 (Mt Thorley), or both loading bins at the same time using one or two trains.

The operators will alternate train loading between bins Nos.1 and 2 as required.

Two trains can fit into this loop as long as the first is loaded.

Operation of Points and Signals

The points and signals at Mt Thorley are operated from NCCN.

Point Isolation Switch is located on the wall of the Mt Thorley Relay Room



General Instructions for Loading Trains

Special conditions

The speed of all trains travelling at Mt Thorley must not exceed 10 km/h.

A notice board is provided at the start of Mt Thorley and is inscribed as follows:

"DRIVER, ENTERING YARD WORKING. SIGNALS UNDER THE CONTROL OF THE MTCL LOADER OPERATOR. MAXIMUM SPEED ON COAL SIDING 10 KM/H."

Two flashing red lights and a warning board, inscribed:

"LOCO DRIVERS, DO NOT PROCEED WHEN RED LIGHT ON BIN IS FLASHING. BIN CHUTE MAY NOT HAVE FULLY RETRACTED. LOCO MAY COLLIDE WITH CHUTE."

are located at the entrance to loading bins Nos.1 and 2.

Loading trains at loading bin No.1

The signaller must clear Down home signal B151.1 to allow the train to enter the arrival road and proceed to the loader approach indicator at 244.405km.

When the train approaches the entrance to loading bin No.2, the loader operator at No.2 bin will clear the approach indicator to authorise the train to pass under No.2 bin while loading continues at No.1 bin.

When loading is completed, the train crew must inform the signaller by train radio that the loading has been completed and then proceed to the signal at the end of the departure road.

Loading trains at loading bin No.2

The signaller must clear Down home signal B151.1 to allow the train to enter the arrival road and proceed to the loader approach indicator at 244.405km.

The loader operator at bin No.2 will clear the indicator at the entrance to bin No.2 when the train is required to proceed under the loading bin.

When loading is completed, the train crew must inform the signaller by train radio that the loading has been completed and then proceed to the signal at the end of the departure road.

Loading trains using loading bins Nos.1 and 2 (tandem train loading instructions)

When required, trains consisting of more than 36 vehicles may be loaded from loading bins Nos.1 and 2 at the same time. The loader operator at bin No.2 will load the front 36 wagons and the loader operator at bin No. 1 will load the remaining wagons.

The signaller must clear Down home signal B151.1 to allow the train to enter the arrival road and proceed to the loader approach indicator at 244.405km.

When loading is completed, the train crew must inform the signaller by train radio that the loading has been completed and then proceed to the signal at the end of the departure road.

Refer to interface agreement IA1633 for further details.

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2.10 Wambo Siding (WUL)

General Arrangements

Wambo siding is located off the terminal end of the Mt Thorley branch line.

Entry of Down trains into the Wambo branch line is indicated on B150.5 signal by a pulsating yellow indication to show that the route to the Wambo branch is set and a proceed indication is displayed on B151.1 signal.

B151.1 includes a right hand turnout indication. This aspect is to indicate that the route to the Wambo Branch is set and cleared to proceed.

Entry in the Wambo arrival road is controlled by signal W157.7 and no 29 points.

The departure of Up trains from the Wambo departure road is controlled by Up home/starting signal W158.2.

The departure of Up trains from the Wambo Branch onto the Mt Thorley – Saxonvale section is controlled by Up home/starting signal W151.2.

The 28 Points EOL will be provided on the wall of the Mt Thorley relay room.

The Points Isolating Switch for Mt Thorley and Wambo Rail Spur will be provided on the wall of the Mt Thorley relay room.

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