KiwiRail

Local Network Instructions:

L6 All Lines West of Rolleston

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1. General Instructions

Heat Sheets

The Daily Heat Sheet for all lines west of Rolleston can be found here.

1.1 Bulletins

Terminal	All Bulletins affecting
Otira	• Midland Line
Greymouth	• Midland Line • Stillwater–Ngakawau Line • Hokitika Line • Rapahoe Branch
Westport	• Otira–Greymouth • Stillwater–Ngakawau Line

1.2 Automatic Signalling

Trains running on the Midland Line between Rolleston and Arthur's Pass and between Otira and Stillwater are controlled from Train Control and are signalled in accordance with **L6.2 Midland Line Automatic Signalling Rules**.

For the purpose of the Midland Line Automatic Signalling Rules, Train Control is the Signaller for Rolleston.

Unattended crossing stations are:

- Staircase
- Craigieburn
- Cass
- Cora Lynn
- Aickens
- Jackson
- Rotomanu
- Moana
- Kokiri

Special instructions apply at Springfield, and Stillwater. These are in the station instructions portion of this section.

The main line points at Phoenix Meat Co. Siding are controlled by switch locks.

The main line points at WMP (Westland Milk Products) and Racecourse Hill Sidings are controlled by high column switch stand and switch lock.

Authority for trains to depart Stillwater into the Midland Line Automatic Signalling Area:

- All trains must obtain permission from the Train Controller before departing

Authority for trains to enter Stillwater into Midland Line Automatic Signalling Area:

- Before entering Stillwater, all trains must obtain an operating instruction from the Train Controller

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1.2.1 Remotely Controlled

Darfield, Springfield, Otira and Arthur's Pass are interlocked stations remotely controlled by the Train Controller.

Trains running between Otira and Arthur's Pass are controlled by the Train Controller in accordance with Automatic Signalling Rules.

1.3 Track Warrant Control

The Track Warrant Control system extends as follows:

1.3.1 Midland Line

Stillwater - Greymouth	
Warrant stations	Omoto
Intermediate boards	Dobson and Kaiata

Greymouth

Referring to Track Warrant Control rule **SO08 Track Warrant Control**, **5.2 Handover of Track Warrants** for crew change over.

This instruction will not apply at Greymouth for train 803 for the movements between Greymouth Station and Greymouth Freight Centre and train 804 for movements from Greymouth Freight Centre.

1.3.2 Stillwater – Ngakawau Line

Warrant stations equipped with Points Indicators are permanently illuminated except for Tiroroa which is illuminated only on approach.

Stillwater - Ngakawau	
Warrant stations	• Red Jacks • Totara Flat • Ikamatua • Mawheraiti • Tawhai • Reefton • Cronadun • Inangahua • Tiroroa • Westport • Sergeants Hill
Intermediate boards	• Matai • Ahaura • Hinau • Taipoiti • Waitahu • Landing Creek • Buller • Mackley • Rahui • Berlins • Cascade • Te Kuha • Nine Mile • Twin Bridges • Fairdown • Waimangaroa • Birchfield
TW Lever Lock Sidings	• Maimai Siding • Grey Valley

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1.3.3 Hokitika Line

Greymouth – Hokitika	
Warrant stations	Kumara
Intermediate boards	Camerons

1.3.4 Train Crossings SNL

Mawheraiti:

When train crossings are to take place at Mawheraiti, the Down train must take the loop.

Reefton:

To ensure the alarms at Buller Road do not operate continuously when trains are crossings and a crew change is involved, the Down train must berth on the loop (stopping as close as possible to 3TIB Down Loop Trailing points indicator) with the Up train taking the main line.

Up Train instructions

The Up train must wait at 4R Up Arrival signal until after the Down train has berthed on the loop, and then proceed into the main line.

After shunting in the Coal Corp siding, shunting movements should proceed into the loop, where possible.

Level crossing alarms will activate when, on the main line:

- 7TIA Up Main Trailing Points Indicator is displaying a purple indication or
- 8L Down Arrival signal is displaying a yellow or ‘A’ light indication

When this occurs and a train / shunting movement is delayed at either indicators or signal, the Rule Procedure **RP02 Using Track Warrant Control, 8.9 Delayed at a Warrant Station** must be applied.

Inangahua:

At the north end of Inangahua station limits there is an unprotected level crossing passing over the crossing loop and main line. On the south side of the level crossing, a train of up to 565 metres can be accommodated.

When a train which is to stop at Inangahua for a train crossing cannot be accommodated in station limits clear of the level crossing, the Locomotive Engineer of the first train to arrive must wait until the opposing train has berthed at the station before proceeding into station limits. The trains will berth in accordance with the instructions on their respective track warrants.

1.4 Shunting Trains and Light Locomotives

1.4.1 General

The area, hours and work of shunting trains will be arranged and advised by the Terminal Supervisor / Team Leader. Work required by the Access Provider is authorised by the Terminal Supervisor / Team Leader in conjunction with the Train Controller.

Shunting trains and light locomotives may run as arranged by each Terminal Supervisor / Team Leader within their respective area. They may also run as directed by the Train Controller.

1.4.2 Assisting Locomotives on Trains

When necessary, locomotives may run attached to, or assist trains in the Reefton - Tawhai area as directed by the Train Controller.

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Assisting locomotives on trains between Reefton and Tawhai must not be attached at the rear unless the air brake is coupled through to the rear locomotive.

1.4.3 Crewing

When shunting trains and light locomotives are running under ATC conditions the Train Controller must be advised.

The Train Controller must endorse the train control diagram alongside the plot line for the intended movement.

1.5 General Operating Instructions

1.5.1 Brakes on Coal Trains

As the consists of coal unit trains (made up of C Type loaded / empty wagons) are only changed occasionally, brake tests need only be carried out in the following situations:

Terminal Test in Conjunction with a Train Inspection

- When trains conveying empty C Type wagons enter Westport, a terminal test / train inspection must be carried out before proceeding to Ngakawau. If the train runs direct to Ngakawau without travelling into Westport, then the terminal brake test and inspection must be carried out before the loaded train departs Ngakawau.
- On C Type wagons before being attached to a train en route, for example from Inangahua, Reefton, Addington / Middleton.

Intermediate Test

- After locomotives are changed or when locomotives are reversed to the other end of a coal unit train for the return journey after arrival at a terminating station. The exceptions are at Greymouth and Ngakawau where a terminal test must be carried out.
- After a train consist is changed, for example wagons attached / detached.
- When any coupling hoses have been uncoupled for any reason
- If the Locomotive Engineer of a train considers that the airbrake is not functioning satisfactorily.

Rail Operating Code 5.3 Train Marshalling, Build, and Inspection Procedures, 6.5.1 Terminal Test and **6.6 Intermediate Test** are modified accordingly.

In addition, terminal brake tests may also be carried out in the Mechanical Depot as arranged by the KiwiRail Manager Middleton Yard.

1.5.2 Fuel Conservation - General

Before departing Otira, all Down trains must have the rear locomotive(s) on freight trains shut down unless:

- locomotives are required for tonnage purposes
- a notice issued by a Rolling Stock Representative, fixed to the back wall of the locomotive cab advises ‘Do Not Shut Down’.

1.5.3 Fuel Conservation - TranzAlpine

Where the train consist is nine or less carriages:

803 TranzAlpine

- Departing Christchurch Station, the lead locomotive must be operated offline except when descending the Otarama Bank between Bridge No.15 (55.06 km) and Bridge No.16 (57.03 km) for dynamic brake testing and through the Otira Tunnel

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- Both locomotives must be operating through the Otira Tunnel
- At Otira, the trailing locomotive must be shut down

804 TranzAlpine

- Departing Greymouth, the trailing locomotive must run offline to Otira
- At Otira, the trailing locomotive must be brought online
- At Arthur's Pass, the trailing locomotive must be shut down

Where the train consist is ten or more carriages, both locomotives can be used.

1.5.4 Fuel Conservation – Coal Trains

Departing Middleton, the lead locomotive is to be operated offline except when descending the Otarama Bank between Bridge No.15 (55.06 km) and Bridge No.16 (57.03 km) for dynamic brake testing and through the Otira Tunnel.

The trail locomotive is not required from Otira to Ngakawau and must travel shut down.

NOTE
Where adverse weather or poor rail conditions exist, the trail locomotive can be used to assist with dynamic braking on the descending grade through to Jackson. In this case, the train is to be stopped at Jackson or Inchbonnie and the trail locomotive shut down.

1.6 Maximum Speeds

1.6.1 Maximum Speed of Motive Power Units and Rolling Stock

DC, DCP, DFT, DXB, DXC and DXR Locomotives 100 km/h

1.6.2 Midland Line

Permanent Speed Restriction:

At Springfield a permanent speed restriction applies for all freight trains approaching these stations as the spacing distance between signals is such that adequate stopping distance is not provided between successive signals.

When a freight train is approaching these stations, the train may resume normal line speed if the signal or signals to which the speed restriction applies are displaying, 'Clear, Normal Speed'.

Portion of Line	Kilometres per hour		
	Exp P	Exp F	F
Rolleston–Springfield	**100**	**80**	**55**
EXCEPT			
Between 0.500 km and 0.288 km (No.12R signal) at Rolleston for Up trains	50	50	50
Darfield Loop for all locomotives and rolling stock over 16.3t axle load	10	10	10
Between 38.03 km and 38.35 km for Down trains (Curve Road level crossing Sheffield)	85	..	..
Between 39.33 km and 39.38 km for Down trains (Queen Street level crossing Sheffield)	85	..	..
Between 48.42 km and 48.74 km for Down trains (Pococks Road level crossing)	55	55	55
Springfield – 63.24 km (between Springfield and Staircase)	**80**	**80**	**55**

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Portion of Line	Kilometres per hour		
EXCEPT			
Past Springfield platform for FC wagons	..	55	..
Up trains between 49.26 km and No.4RABC signal Springfield			
Through Tunnel No.1			
For CC and DX Locos	40	40	40
For, JP, JT wagons, 2.6m containers on USQ wagons and DXR locos	25	25	25
For FE wagons, Ballast Cleaner and Concrete Sleeper Layer	..	15	15
Through Tunnel No.2			
For FE, JP, and JT wagons, 2.9m containers on UDA wagons, Concrete Sleeper Layer and DXR locos	25	25	25
For Ballast Cleaner	..	15	15
Through Tunnel No.3			
For 2.9m containers on UDA wagons	..	55	..
FE wagons	..	50	50
For Concrete Sleeper Layer	..	25	25
Through Tunnel No.4			
For AK type carriages, FE, MCW, JT wagons, 2.9m containers on UDA and milk tanks on PK type wagons, 2.6m containers on 'I' class, USK and USQ wagons	25	25	25
For Concrete Sleeper Layer and DXR locos	15	15	15
Through Tunnel No.5			
For FE wagons	..	15	15
For 2.9m containers on UDA wagons, Ballast Cleaner and DXR locos	..	25	25
Through Tunnel No.6			
For DXR locos and FE wagons	55	55	..
For 2.9m containers on UDA wagons	..	25	25
63.24 km (Staircase) – 69.63 km (Br.28 Slovens Creek between Staircase and Craigieburn)	**60**	**60**	**55**
EXCEPT			
Through Tunnel No.7			
For DXB / DXC locomotives	55	55	..
For FE wagons, 2.9m containers on UDA wagons	..	25	25
For DXR locos	15	15	15
Through Tunnel No.8			
For 2.6m containers, 2.9m containers on UDA, JP, JT wagons and DXR locomotives	15	15	15
For AK type carriages, FE wagons, 2.6m containers on 'I' class, USK wagons	25	25	25
For Concrete Sleeper Layer Bulldozer (No. 990) on any wagon	..	50	50
For DXB / DXC locomotives	55	55	..
Through Tunnel No.9			
For FE wagons	..	55	..
For 2.9m containers on UDA wagons	..	25	25
Through Tunnel No.10			
For DXR locomotives and Ballast Cleaner	55	55	..
For FE wagons, LXM containers on PK type wagons and standard ISO 2.6m containers	..	25	25
For JP and USL wagons, 2.9m containers on UDA wagons	..	15	15
Through Tunnel No.12			
For FE wagons, DXB/DXC/DXR locomotives	55	55	..
69.63 km (Br.28 Slovens Creek between Staircase and Craigieburn) – Arthur's Pass (Down Home)	**90**	**80**	**55**
EXCEPT			
Between 69.700 km and 69.890 km (Staircase – Craigieburn)	40	40	40

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Portion of Line	Kilometres per hour		
Between 72.80 km and 69.45 km Up Trains only from Top of the Avoca Bank to Western Portal of Tunnel No.16	#60	50	50
# This applies to Diesel hauled passenger services only			
Up Trains from 81.88 km to 8108 Up Arrival Signal Craigieburn	..	70	..
Craigieburn Loop for all locomotives and rolling stock over 16.3t axle load	10	10	10
Arthur's Pass (Station Limits)	**25**	**25**	**25**
Arthur's Pass (Up Home) – 125.90 km (Bridge No.50)	**40**	**40**	**40**
EXCEPT			
For Up trains exiting Otira Tunnel	20	20	20
125.90 km (Bridge No.50) – Otira (Down Home)	**70**	**60**	**55**
Otira (Station Limits)	**25**	**25**	**25**
EXCEPT			
Past North Main veranda for DXR locos	15	15	15
Otira (Up Home) – Rotomanu	**80**	**80**	**50**
EXCEPT			
Up trains from 130.47 km to Otira Up Home signal	50	50	..
For Down trains past 13701, Down Arrival signal, Aickens	..	60	..
For Up trains from 138.49 km until locomotive reaches Aickens (SH 73) level crossing 138.15 km	50	50	..
For Down trains past 14743, Down Arrival signal, Jackson	..	65	..
Rotomanu – Stillwater	**80**	**70**	**50**
EXCEPT			
Through Tunnel No.18			
For CB, JP, JT wagons and 2.6m containers	..	25	25
For Ballast Cleaner and 2.9m containers on UDA wagons	..	15	15
Between 175.90 km and 176.01 km	25	25	25
Between 193.4 km - 193.6 km CIMW site constant speed over site	..	70	..
Between 196.25 km and 197.50 km	50	50	..
Stillwater – 210.56 km	**70**	**70**	**55**
EXCEPT			
Past Stillwater platform for RM31	25	..	..
Between 197.50 km and 201.20 km	40	40	40
Between 208.50 km and 209.11 km	30	30	30
Between 209.11 km and 209.70 km (Omoto slip)	10	10	10
Between 209.70 km and 210.50 km	30	30	30
210.56km – Greymouth – Greymouth Freight	**25**	**25**	**25**
EXCEPT			
Past station veranda for FE wagons	..	15	15
Between 210.99 km and 211.27 km for Down trains only (Tainui Street level crossing) ##	15	15	15

Once the leading vehicle is on the level crossing, the train may resume line speed.

1.6.3 Stillwater – Ngakawau Line

Portion of Line	Kilometres per hour		
	Exp P	**Exp F**	**F**
Stillwater – Totara Flat	**70**	**70**	**50**
Totara Flat – Northern Portal No. 1 Tunnel	**50**	**50**	**50**
EXCEPT			
Through Tunnel No.1			

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Portion of Line	Kilometres per hour		
for JP, JT, 2.6m containers, 2.9m containers on UDA wagons and Kiwi milk tanks on PK type wagons, and 2.6m containers on 'I' class wagons	..	25	25
2.6m containers on USK wagons and FE wagons	..	15	15
AK Class Cars	25	..	..
Northern Portal No. 1 Tunnel – Reefton	**65**	**65**	**50**
EXCEPT			
Down trains between 60.50 km (approaching 8L) and Reefton	..	50	..
NOTE Up trains must not increase speed to 65 km/h until Buller Road level crossing (Reefton)			
Reefton – Inangahua	**70**	**70**	**50**
EXCEPT			
Between 60.50 km (within Station limits Reefton) and 62.50 km	..	50	..
Inangahua – Westport	**50**	**50**	**50**
EXCEPT			
Between 97.51 km and 97.53 km (Whitecliffs)	25	25	25
108.345 km – 109.16 km (falling rocks)	25	25	25
113.60 km – 113.95 km (falling rocks)	25	25	25
Between 124.05 km and 124.50 km (unstable hillside)	25	25	25
Locomotive Engineers are warned to be on the lookout for rock falls between Tunnel No.6 and 125.50km (between Tiroroa and Te Kuha)			
Westport	25	25	25
EXCEPT			
Over Queen St and SH67 level crossings within Westport Station limits	10	10	10
Westport – Ngakawau	..	50	50
EXCEPT			
Over SH67 level crossing at 158.25 km	..	25	25

1.6.4 Rapahoe Branch

Portion of Line	Kilometres per hour F
Omoto–Rapahoe	**30**

1.6.5 Hokitika Line

Portion of Line	Kilometres per hour F
Greymouth – Hokitika	**40**
EXCEPT	
Over Bridge No.13 at 14.25 km	10
From 38.175 km to End of Line (including Hampden St, Weld St, and Fitzherbert St (SH6) level crossings)	10

1.7 Whistle Boards

For Down trains km	For Up trains km	Stations between	Warning for
Track Meterage			
Midland Line			
50.40	..	Springfield and Staircase	Private level crossing
52.28	..	Springfield and Staircase	Private level crossing

For Down trains km	For Up trains km	Stations between	Warning for
75.18	..	Staircase and Craigieburn	Level crossing
207.89	..	Dobson and Greymouth	Pedestrian crossing
Hokitika Line			
# 35.70	# 36.30	Old Houhou Siding and Hokitika	Private level crossing

1.8 Train Braking on Long Descending Grades

When the length of the train is greater than 650m, the brake recharge times are longer than some Locomotive Engineers may have experienced. Typically for an 800m long train recharge times are:

- 1.40 minutes from minimum reduction
- 2.50 minutes from 70 kPa reduction
- 3.40 minutes from full service

If serial braking is to be used, then the difference between release speed and maximum speed must be increased to ensure enough time is available for a full recharge between brake applications. The following is the recommendation for braking train when in excess of 650m long.

- Dynamic brake is the preferred braking method for downgrades up to 1 in 60
- Maintaining braking is the preferred method for downgrades steeper than 1 in 60
- Power braking is not to be used for long trains as it shortens the time available for a full recharge
- Where serial braking is used on downgrades up to 1 in 80, releasing speed must be at least 40 km/h slower than posted line speed. Where the posted line speed is less than 40 km/h then releasing speed must be stopped, with the train held until a full recharge has been obtained.
- Where serial braking is used on downgrades steeper than 1 in 80, releasing speed must be at least 50 km/h slower than posted line speed. Where the posted line speed is less than 50 km/h, releasing speed must be stopped, with the train held until a full recharge has been obtained.
- Any automatic brake application must be at least a 70 kPa reduction prior to releasing the brakes. This is to ensure that all the brakes release correctly.

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2. Level Crossings

2.1 Automatic Warning Devices

Except where the name of the crossing is prefixed by a symbol, the standard equipment consisting of flashing lights and bells is installed at level crossings listed in this instruction.

Letter	Meaning
A	Bell signals operate during restricted hours
B	Barrier arms also provided
C	Fitted with strobe lights
D	Fitted with Level Crossing Predictor
E	Signs worded “TRAIN COMING” operates when a train is approachingFitted with Level Crossing Predictor
F	Flashing signs worded “SECOND TRAIN COMING” operates when a second train is approaching
G	Pedestrian automatic gates also provided
J	Bell signals only
L	Flashing lights only
M	Manual Control instructions on following pages
O	Equipped with control panel to switch alarms off
P	When a power failure occurs, and Points Indicators have been illuminated or a signal cleared for a movement these level crossing alarms will continue to operate for up to four minutes before cancelling. Under these conditions the Locomotive Engineer should approach the crossing with caution, even if the alarms are operating.
R	Remote manual control of warning devices, for insulated vehicles
S	Fitted with special level crossing control panel
T	Fitted with remote manual control and barrier raise from Train Control
X	Enlarged white side lights

Unless otherwise stated Level Crossing Alarms will start and cancel automatically for the passage of trains.

In signalled areas the alarms will operate in conjunction with the signals leading over them. If it is necessary to pass a signal at Stop, all or some of the alarms in the section ahead may not operate correctly. In a number of cases, as specified by S&I Diagram, alarms will operate in conjunction with signals controlled by a local panel. Pressing the Clear button will initiate the alarms and after a short delay the signal will clear. Pressing the Stop button will restore the signals to Stop and after a time delay the alarms will stop.

At TWC Indicator loops the alarms will operate in conjunction with the indicators leading over them. Alarms Start Here boards may be provided to indicate where the alarms start. If it is necessary to pass these boards, but not the indicator, the indicator should be cancelled. If a train is required to pass an indicator at Stop the alarms may not operate correctly.

Crossings fitted with Level Crossing Predictors do not have a fixed starting point; rather the warning time for the automatic alarms is computed from the speed of the approaching train. Therefore, through movements approaching the crossing should not accelerate but maintain constant speed after passing a point approximately 500 metres from the crossing. If a movement stops on the approach to the crossing, provided it is not within 15 metres of the crossing, the alarms will cancel. When the movement restarts, the alarms will also restart automatically but the warning time may be reduced. The Locomotive Engineer must observe that the alarms are operating before proceeding over the crossing.

To avoid excessive operation of alarms when shunting, or for non-automatic operation, manual controls consisting of “Start” and “Cancel” buttons are provided as shown herein. Alarms started manually will cancel automatically when the train clears the crossing unless stated otherwise. Once the alarms have been manually cancelled all subsequent operations must be manually operated until the train leaves

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the area. Under manual control the Locomotive Engineer must check the alarms are operating before proceeding onto the crossing. Where barrier arms are provided the Locomotive Engineer must wait until the barriers are fully down before proceeding onto the crossing.

When manually cancelled or cancelled automatically after the train has passed over the crossing, if the train remains in the track circuit controlled area for a prolonged period the alarms may reactivate and should be manually re-cancelled.

IMPORTANT
Manual controls must not be used to cancel alarms operating due to fault conditions.

2.2 Midland Line

Km	Features	Crossing	Locations at or between
0.66	M	Jones Road	Rolleston
11.39		Bealey Road	Rolleston and Darfield
16.86	D	Courtenay Road	Rolleston and Darfield
18.84		West Coast Road (SH73)	Rolleston and Darfield
22.97	D	Creyke Road	Rolleston and Darfield
23.53	D	Horndon Street	Rolleston and Darfield
24.77	R S	Mathias Street	Darfield
25.49	R S	McMillan Street	Darfield and Springfield
26.12	D	North Terrace	Darfield and Springfield
29.47	B D S	Fonterra Road	Darfield and Springfield
37.27		Waimakariri Gorge Rd	Darfield and Springfield
38.34		Curve Road	Darfield and Springfield
39.37		Queen Street	Darfield and Springfield
48.74	B P S	Pococks Road	Springfield
96.08		Mt White Bridge	Cass and Cora Lynn
130.13	B P S	Otira Settlement Road	Otira
138.15		Aickens (SH73)	Aickens and Jackson
140.68		SH73	Aickens and Jackson
155.15	D	Lake Brunner Road	Jackson - Rotomanu
178.43		Arnold Valley Road	Moana and Kokiri
191.06	M	Blairs Road	Kokiri and Phoenix Meat Co Siding
202.30	A	Taupo Terrace	Stillwater and Dobson
210.82	D	Mawhera Quay	Omoto and Greymouth Freight
211.27	A B S	Tainui Street	Greymouth
211.39	A	Albert Street	Greymouth
211.50		Tarapuhi Street	Greymouth
211.65		Herbert Street	Greymouth

2.2.1 Level Crossing Speed Restrictions

When Automatic Signalling is suspended, Speed Restriction boards may be displayed at level crossings equipped with automatic alarms.

The speed of the train must be reduced to 10 km/h.

Warning Boards will not be displayed.

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RP15 Implementing Temporary Speed Boards, 5. Erection of Speed Boards is modified accordingly.

2.2.2 Unplanned Suspension of Signalling

When Automatic Signalling is suspended for unplanned reasons, the area with the highest number of controlled level crossings is to receive the highest priority for restoration of Midland Line Automatic Signalling areas.

Area	Level Crossings
Rolleston – Springfield	12, plus Pocock Road Springfield
Springfield – Arthur's Pass	1
Otira – Jackson	3 (including Otira Settlement Road)
Jackson – Moana	1
Moana – Stillwater	2

Speed Restriction boards are to be opened by the first Competent Worker at the level crossing.

The boards are locked in either the closed or open position with a 100 lock (attached by chain to sign).

2.2.3 Planned Suspension of Signalling

Speed Restriction boards are to be opened and closed by the Signals / Track Maintenance Representative who applied for the suspension.

2.3 Stillwater – Ngakawau Line

Km	Features	Crossing	Locations at or between
25.73		Raupo (SH7)	Red Jacks and Totara Flat
30.08		Dudleys (SH7)	Totara Flat and Ikamatua
45.56	D	SH7 (Stony Creek)	Mawheraiti and Reefton
48.26		SH7 (Hinau)	Ikamatua and Maimai Siding
61.07	P	Buller Road (SH69)	Reefton
84.76		Landing Bridge (SH69)	Cronadun and Inangahua
89.79		Oweka (SH69)	Cronadun and Inangahua
..	B S	Queen Street	Westport
..	B S	(SH67)	Westport
143.81		Fairdown (SH67)	Fairdown and Waimangaroa
158.25		SH67 (Kerrs)	Ngakawau – Sergeants Hill
160.99		Granity (SH67)	Birchfield and Ngakawau
162.12		Millerton Road	Birchfield and Ngakawau

2.4 Hokitika Line

Km	Features	Crossing	Locations at or between
1.95		Raleigh Street	Greymouth
2.78		Nelson Street	Greymouth and South Beach Siding
3.35		Weenink Road	Greymouth and South Beach Siding
17.46	M	Kumara (SH6)	Kumara
31.39	B D S	SH6 Arahura	Kumara and Hokitika
37.93		Park Street	Hokitika
38.17	M	Hampden Street	Hokitika

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2.5 Rapahoe Branch

Km	Features	Crossing	Locations at or between
6.38	D	Seven Mile Road (SH6)	Omoto and Rapahoe

2.6 Alarms with Manual Control

2.6.1 Jones Road, Rolleston

Manual control is available for Down trains adjacent to 93 switch lock. There may be a short time delay before manual control is available as indicated by a light on the panel.

2.6.2 Blairs Block Road, Phoenix Meat Co Private Siding

Manual control is available for Up trains adjacent to 19121 Switch lock.

There may be a short time delay before manual control is available as indicated by a light on the panel.

2.6.3 Mawhera Quay, Greymouth

When an Up train has stopped at the Greymouth Station platform the alarms will cancel automatically after a time delay. An Alarms Start Here board has been installed 20 metres from the crossing. Up trains starting from the platform must move cautiously towards the crossing. If the alarms have not already restarted, they will begin to operate when the train passes the Alarms Start Here board.

2.6.4 SH6, Kumara

Manual control is available for Up trains adjacent to No.1 main line points. There may be a short time delay before manual control is available.

2.6.5 Hampden Street, Hokitika

A manual start button is located adjacent to the main line points to restart the alarms if a shunting movement is going to re-occupy the crossing without first drawing clear of the approach tracks.

If the alarms do not restart immediately, they will restart automatically as the movement nears the crossing. Once the alarms have been started, they will only stop by clearing the approach track or making a movement onto, and then off the crossing.

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3. Standing Room for Wagons

3.1 Midland Line

Locations	Standing Room metres	Description of Siding
WMP Siding (Westland Milk Products)	500	Siding
Darfield	420	No.1 Road
Springfield	683	Loop (615m clear of crossing)
	458	No.1 Road
Staircase	685	Loop
	98	No.1 Road
Craigieburn	555	Loop
	113	No.1 Road
Cass	687	Loop
	113	No.1 Road
Cora Lynn	572	Loop
	53	No.1 Road
Arthur's Pass	542	South Main including East backshunt (max train length excluding bankers – 480 m)
	536	Loop including east backshunt (max train length excluding bankers – 480 m)
Otira	278	Loop
Aickens	460	Loop
Jackson	531	Loop
Rotomanu	616	Loop
	255	No.1 Road
Moana	560	Loop
Kokiri	650	Loop
Phoenix Meat Co Siding	375	Loop
Stillwater	378	Loop
Greymouth Freight	465	Main Line

3.2 Stillwater – Ngakawau Line

Locations	Standing Room metres	Description of Siding
Red Jacks	530	Loop
Totara Flat	550	Loop
Ikamatua	240	Loop
	158	No.1 Road
Grey Valley	910	Siding
Mawheraiti	550	Loop
Maimai Siding	135	Siding
Tawhai	270	Loop
	173	No.1 Road
Reefton	597	Loop
	405	No.1 Road
Cronadun	315	Loop
Inangahua	617	Loop
	210	No.1 Road

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Locations	Standing Room metres	Description of Siding
Tiroroa	510	Loop
Westport	503	No.1 Road
	428	No.2 Road
Sergeants Hill	750	Loop
Ngakawau	68	Loop No.1 Road
	420	Loop No.1 Bin Coalcorp Siding
	420	Loop No.2 Bin Coalcorp Siding

3.3 Hokitika Line

Locations	Standing Room metres	Description of Siding
South Beach Siding	315	Siding
Kumara Siding	255	Siding
Hokitika	202	No.1 Road
	158	No.2 Road

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4. Clearances

The following sidings and structures are not to standard height and/or side clearances. Take great care when working in these localities. Yard clearances are advised with the Workplace Safety Plan.

CAUTION
Rolling Stock must not be shunted past or through any structure without first ensuring that clearances are adequate.

An asterisk (*) alongside the name of the line or siding indicates that the distance shown in the column 'Side clearance from centre line of track' is the distance between the centre lines of the two tracks and is substandard.

4.1 Midland Line

Location	Siding Or Line	Structure	Height Above Rail Level mm	Side Clearance from Centre Line of Track mm	Remarks And Rolling Stock Prohibited from Passing Structure
Springfield	Main Line	Platform	435	1415	
Otira	North Main	Platform	525	1290	On 500m radius LH curve
	South Main	Platform	590	1385	On 800m radius RH curve

4.2 Stillwater – Ngakawau Line

Location	Siding or Line	Structure	Height Above Rail Level mm	Side Clearance from Centre Line of Track mm	Remarks And Rolling Stock Prohibited from Passing Structure
Reefton	Loop and Siding	3TIB Trailing Indicator		1825	
	Loop and Siding	3TIB push-button control*		..	
	Loop and Siding	7TIB push-button control*		..	
Westport	Main Line	Platform		..	

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5. Radio Channels

5.1 Midland Line

From Km / location	To Km / location	Channel
0.35 - Rolleston	58.5 - T2 (South end)	14
58.5 - T2 (South end)	59.8 - T4 (North end)	2
59.8 - T4 (North end)	61.2 - T5 (South end)	14
61.2 - T5 (South end)	62.6 - T6 (North end)	3
62.6 - T6 (North end)	63.00 – Staircase (includes station limits Staircase)	14
63.00 - Staircase	63.8 - T7 (South end)	11
63.8 - T7 (South end)	64.5 - T8 (North end)	2
64.5 - T8 (North end)	65.4 - T9 (South end)	11
65.4 - T9 (South end)	66.8 - T10 (North end)	4
66.8 - T10 (North end)	68.0 - T11 (South end)	11
68.0 - T11 (South end)	69.1 - T16 (North end)	2
69.1 - T16 (North end)	88 - Cass	11
88 - Cass	115 - Arthur's Pass	10
115 - Arthur's Pass (includes station limits)	147 - Jackson	4
147 - Jackson	Greymouth (including Rapahoe Branch)	3

5.2 Hokitika Line

From Km / location	To Km / location	Channel
Greymouth	Hokitika	3

5.3 Stillwater - Ngakawau Line

From Km / location	To Km / location	Channel
Stillwater	52.00 (just south of Tawhai)	3
52.00 (just south of Tawhai)	Tunnel 1	4
Tunnel 1 (Reefton tunnel)		6
Tunnel 1	Tunnel 2	4
Tunnel 2	Tunnel 3	3
Tunnel 3	Tunnel 4	4
Tunnel 4	Tunnel 5	2
Tunnel 5	Ngakawau	4

Due to an intermittent fault between Reefton and Inangahua, a temporary repeater has been installed at the 70.16km (Cronadun) to provide alternative and fill-in coverage.

The repeater will provide the following coverage:

From Km / location	To Km / location	Channel
65.00 - Waitahu	91.00 - Inangahua	8

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5.4 Snake Diagram

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6. Midland Line

6.1 Suspension of Signalling

When suspension of signalling will occur for more than 30 days, the following conditions must apply:

1. All intermediate signals within the suspended section(s) must be taken 'Out of Use' as per **SO01 Responding to Signals, 6. Signals Not in Use** and this must be completed within 7 days of the suspension of signalling commencing.
2. A bulletin must be issued:
   a. advising suspension of automatic signalling in accordance with **L6.2 Midland Line Automatic Signalling Rules, 8. Suspension of Automatic Signalling**, including the above condition, and
   b. listing the signals Not in Use.
3. Signals must be returned to their operational position no less than two days before reinstatement of signalling.
4. A bulletin must be issued:
   a. advising when the Intermediate signals have been returned to their normal operational positions, and
   b. that suspension of signalling rules apply within the section(s), and
   c. cancelling the original bulletin.

6.1.1 Suspension of Signalling between Jackson and Rotomanu

Automatic Signalling is suspended between Jackson and Rotomanu in accordance with **L6.2 Midland Line Automatic Signalling Rules, 8. Suspension of Automatic Signalling.**

The following Intermediate signals between Jackson and Rotomanu have been taken out of use in accordance with **Network Signals, Indicators and Boards Manual, 2.4 Colour Light Signals Not In Use.**

Intermediate Signals between Jackson and Rotomanu	
Down Direction	**Up Direction**
15015	15958
15641	15640
15957	15016

Operators must:

- act on the indications displayed by the arrival signals at the end of the suspended areas, as they may be operative.
- apply mandatory calling of Operating Instruction (Mis.51) limits and crossing instructions.
- approach Lake Brunner Road level crossing at 155.15 km at a speed not exceeding 40 km/h. Once on the crossing, Operators may resume normal line speed.
- observe the provisions of **L6.2 Midland Line Automatic Signalling Rules, 8. Suspension of Automatic Signalling.**

NOTE

If Suspension of Automatic Signalling is required for another area, a special bulletin may be issued. **SO02 Automatic Signalling Rules, 17. Midland Line** is modified accordingly.

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6.2 Testing of Tunnel Radio System – Midland Line

NOTE
Otira Tunnel has a separate checking function for its radio system.

Infrastructure Representatives who have received special training will test the other Midland Line tunnel radio systems in a Hi-Rail vehicle as follows:

Tunnel	Test Frequency	Normal Test Day
2, 5, 8, 9, 11	Weekly	Tuesday and Friday

When the Hi-Rail is in the appropriate tunnel and positioned correctly:

- Select the correct Train Control radio channel.
- Press the *button to send call (where appropriate)
- The Train Controller will hear this, but nothing will be displayed on the MSP Radio computer screen.
- A reply will be sent automatically to the Hi-Rail vehicle with 2 selcall tones.
- Once 2 selcall tones close together have been heard then the system is operating correctly.

The Hi-Rail driver must advise the Train Controller of the test results who must record this information on the train control diagram.

Operations Support must be contacted for any reported faults.

If the Hi-Rail vehicle cannot perform these tests during any given week:

- The Train Controller must be advised and arrange for a locomotive to perform the test.
- In this case, the test must be performed by sending a Base Call in the appropriate tunnel and the Locomotive Engineer confirming that the call has ‘locked on’
- The Train Controller must confirm that the Base Call was received.

6.3 Passenger Train – Number of Passengers

The Locomotive Engineer must advise the Train Controller the total number of passengers and crew on the train departing:

- Springfield (west bound)
- Arthur’s Pass (in both directions)
- Otira (east bound).

The Train Controller must record these numbers on the train control diagram.

6.4 Tagged Locomotives

‘P’ and ‘L’ tagged locomotives may operate on the Midland Line between Rolleston and Springfield only.

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IMPORTANT

- ‘P’ tagged locomotives must not be dispatched from Middleton to operate west of Springfield.
- ‘L’ tagged locomotives may only operate west of Springfield for emergency relief of disabled trains after approval from a Rolling Stock Representative has been obtained.

6.5 Weather Event Management – Midland Line and SH73

Forecasted significant weather events which may cause the Midland Line and/or SH73 between Springfield and Stillwater to become impassable will be managed in accordance with SHE Guide 15-GUI-007-SHE Weather Event Management – State Highway 73.

Rain or Wind Event

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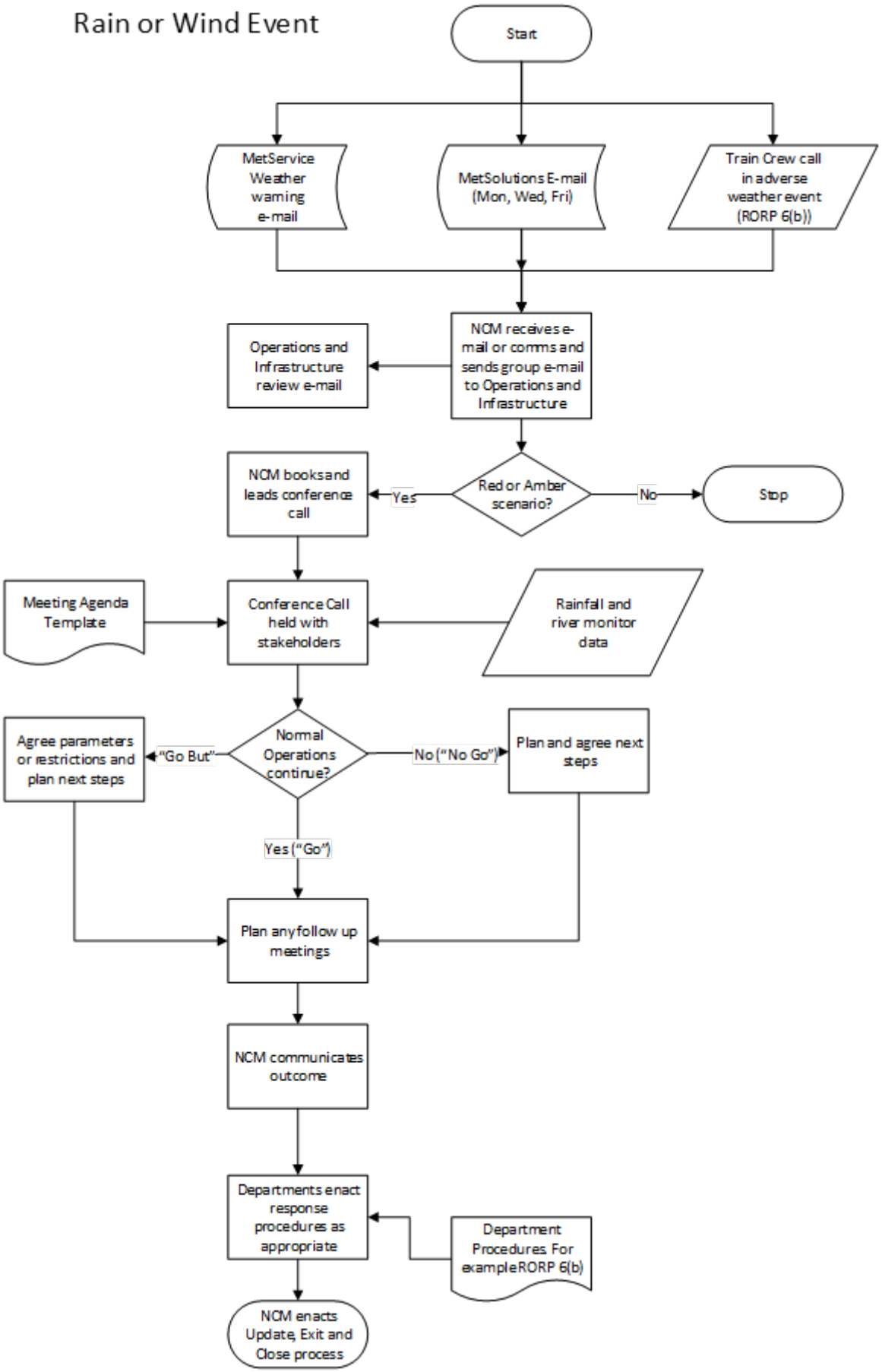
Rain or Wind Event
Start
MetService Weather warning e-mail
MetSolutions E-mail (Mon, Wed, Fri)
Train Crew call in adverse weather event (RORP 6(b))
NCM receives e-mail or comms and sends group e-mail to Operations and Infrastructure
Operations and Infrastructure review e-mail
Red or Amber scenario?
Yes
No
Stop
NCM books and leads conference call
Meeting Agenda Template
Conference Call held with stakeholders
Rainfall and river monitor data
Normal Operations continue?
"Go But"
Agree parameters or restrictions and plan next steps
No ("No Go")
Plan and agree next steps
Yes ("Go")
Plan any follow up meetings
NCM communicates outcome
Departments enact response procedures as appropriate
Department Procedures For exampleRORP 6(b)
NCM enacts Update, Exit and Close process

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Snow Event

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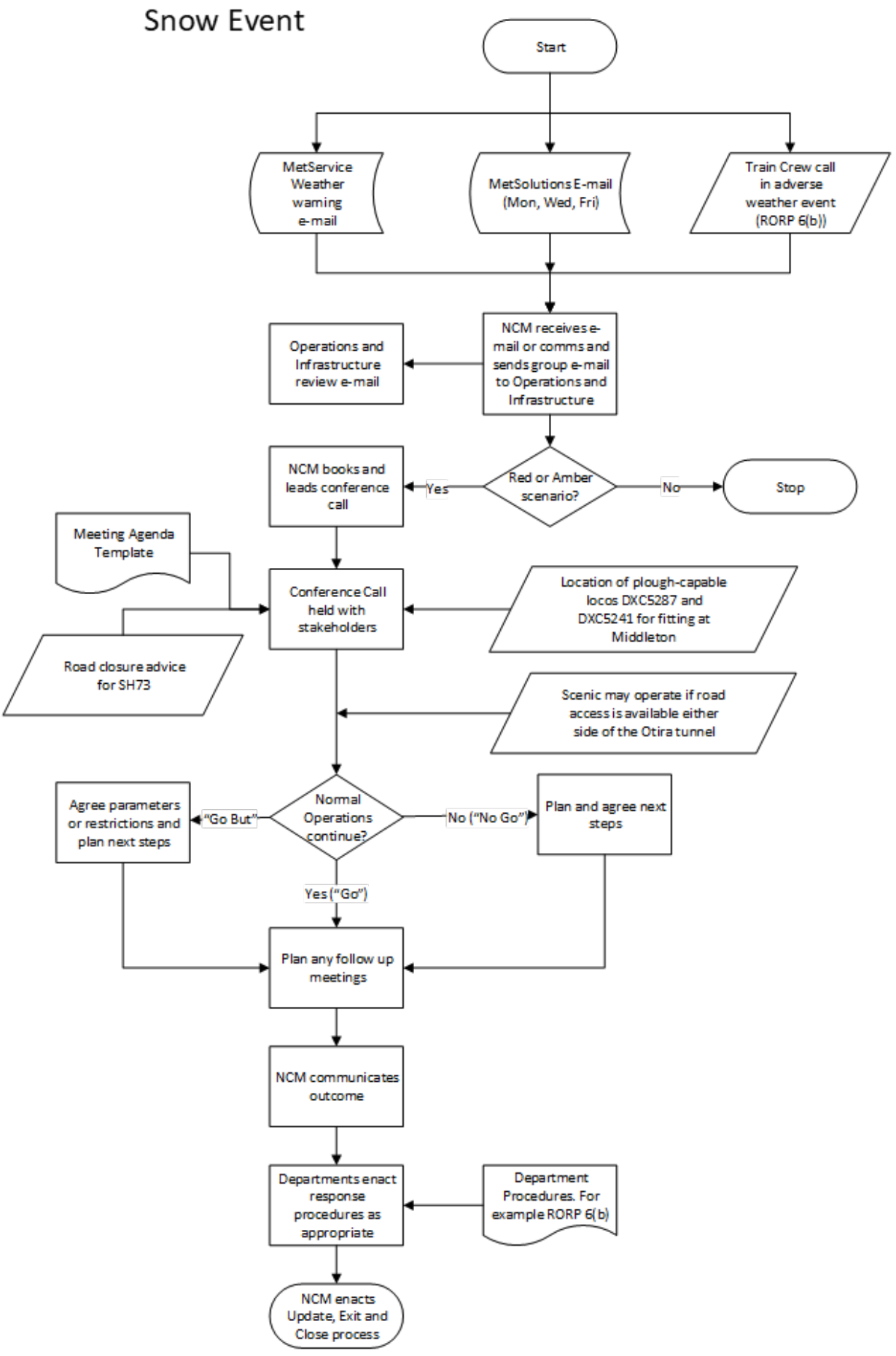
Snow Event
Start
MetService Weather warning e-mail
MetSolutions E-mail (Mon, Wed, Fri)
Train Crew call in adverse weather event (RORP 6(b))
NCM receives e-mail or comms and sends group e-mail to Operations and Infrastructure
Operations and Infrastructure review e-mail
Red or Amber scenario?
Yes
No
Stop
NCM books and leads conference call
Meeting Agenda Template
Conference Call held with stakeholders
Location of plough-capable locos DXC5287 and DXC5241 for fitting at Middleton
Road closure advice for SH73
Scenic may operate if road access is available either side of the Otira tunnel
Normal Operations continue?
"Go But"
Agree parameters or restrictions and plan next steps
No ("No Go")
Plan and agree next steps
Yes ("Go")
Plan any follow up meetings
NCM communicates outcome
Departments enact response procedures as appropriate
Department Procedures. For example RORP 6(b)
NCM enacts Update, Exit and Close process

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6.6 Crossing Trains at Arthur's Pass

The Banker Locomotive Engineer will be the pilot for all setting back train movements and must be positioned to maintain range of vision.

Crossings are prohibited at Arthur's Pass when setting back is required into the Arthur's Pass – Cora Lynn block section when there is protected track work within the section.

IMPORTANT
When crossing passenger trains, movements are only permitted when clearance has been given by the Train Manager that it is safe to do so.

6.6.1 Down Coal / Freight Train Crosses Up Coal / Freight Train

Down Trains Setting Back Procedure:

1. The Down train stops at 8L signal
2. The Up train berths on the loop or south main, stopping short of 8RC/12RC or 8RD/12RB signal
3. RO / BLE proceeds to lead locomotive of Up train and cuts the brakes in, then detach the Bankers
4. Bankers proceed to the east backshunt and BLE changes ends
5. BLE obtains verbal permission from the Train Controller to pass 12L at Stop and Bankers proceed to the north (river) main.
6. RO / BLE proceeds to 4LD/6LB or 4LBC/6LA signal to pilot Up train into the west backshunt
7. BLE pulls the Up train towards the east backshunt until the rear of the train is clear of 4LD/6LB or 4LBC/6LA signal
8. The Up train then sets back into west backshunt under direction of the pilot until in clear of 8RD/12RB or 8RC/12RC signal
9. The Down train berths on the north (river) main behind the Bankers
10. The Bankers attach to the Down train
11. The Down train departs once the brake test has been completed
12. The Up train departs once the block section has cleared

6.6.2 Down Coal / Freight Train Crosses Up Passenger Train

- Coal trains may cross passenger trains.
  - Crossings must take place under the direction of the Banker Locomotive Engineer
- All other crossings are prohibited

NOTE
Up passenger trains originating at Arthur's Pass may cross Down coal / freight trains when authorised by the Network Control Manager.

6.6.3 Up Coal / Freight Train Crosses Down Passenger Train

Reduced clearances exist beyond the end of the station platforms at Arthur's Pass when passenger trains cross coal / freight trains, for passenger safety the following will apply:

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- Up train berths on the loop
- The Bankers detach and proceed to the east backshunt
- The Down passenger train berths on the north (river) main

NOTE
The Locomotive Engineer must advise the Train Manager of any crossing to take place.

- The Bankers must be driven from the short hood / leading end onto the rear of the passenger train berthed on the north (river) main under the direction of the Train Manager
- The Up train must obtain clearance from the Train Manager before any movement to depart
- The Passenger train departs once the Block Section has cleared.

6.7 Dedicated RPO for MTMVs on the Midland Line

The following Mobile Track Maintenance Vehicles (MTMVs) are only permitted to work on the Midland Line (between Springfield and Stillwater) with a dedicated Rail Protection Officer (RPO).

- Tampers, Regulators and Stabilisers
- Ballast Cleaner

NOTE
The RPO cannot be a member of the MTMV crew.

If a dedicated RPO is not available, work is not permitted.

Tampers, Regulators and Stabilisers travelling as a train may work en route without a dedicated RPO, provided they have sole possession of the section where the work is required.

When travelling as a group the provisions of **TS11 Mobile Track Maintenance Vehicles, 5.2 Working En Route** must be adhered to.

No other rail vehicles or work may be authorised in this section while the Tampers, Regulators and Stabilisers are working.

6.8 WMP (Westland Milk Products) Siding

WMP siding is located between Rolleston and Darfield, approximately 650 metres west of Rolleston between the Down Departure signal and the first Down Intermediate signal.

The siding will be operated under the following instructions:

- All trains travelling to or from WMP Siding must be issued with an operating instruction.
- Provisions of **RP14 Operating Switch Lock Sidings** apply when the entire train is to enter the siding.
- Train Controllers can control entry of trains into the Rolleston - Darfield Block section by using the Down Departure signal at Rolleston. This will hold the Departure signal at Darfield at Stop.
  - This control enables Down train movements from Rolleston to proceed and lock in at WMP siding without the need to short issue the operating instruction of any Up train.

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- If a Safe Working Authority is required for any train to enter the Rolleston - Darfield section, or signalling is suspended:
  - the operating instruction must be endorsed on the train control diagram in blue pen
  - If a train is locked in the siding while another train is to travel through on a Safe Working Authority or when Midland Line Automatic Signalling is suspended, the train crew of the train locked in the siding must be advised of the circumstances and instructed not to foul the main line before a Safe Working Authority or Mis.50/51 authority is issued,

6.9 Darfield

Reserved for future instructions relating to Darfield

6.10 Bridge Pier Movement Alarm: Springfield - Staircase

Harvest Static Tilt Sensors have been installed on Bridge No.16 at 57.317 km between Springfield and Staircase.

These sensors detect movement of the pier caused by vibrations from ongoing piling work.

When movement is detected, the sensors will:

- send an alarm to the Train Control signalling screen, and
- send an email to Operations Support and the Network Control Manager.

Upon receiving actions of the movement alarm system, the Train Controller will:

- advise operators of the alarm activation and stop train movements clear of the bridge
- advise Operations Support (155) to arrange Infrastructure personnel to undertake a physical inspection
- once Infrastructure gives clearance to reopen the track, the Train Controller will enter any further temporary speed restriction details into OMS and advise any trains that are already running

Upon receiving clearance from Infrastructure personnel, Operations Support will work with Harvest to reset the alarm and advise the Train Controller when the reset is complete.

6.11 Springfield Signalling Arrangements

When signalling is suspended in accordance with **L6.2 Midland Line Automatic Signalling Rules, 8. Suspension of Automatic Signalling** and Springfield is included. Springfield will operate under the following instructions:

- Locomotive Engineers must act on all signal aspects shown at Springfield except 4LD and 8RD Departure signals, when these signal(s) are included within the Midland Line Automatic Signalling Suspension area.
- When the Train Controller is unable to gain an indication on Nos. 3 and/or 7 motor points, the points are to be isolated, and the crank handle placed in the appointed place. The Train Controller will note on the train control diagram which direction the points are isolated.

B and C Sidings Hand Points:

- These points are hand operated and detected in the yard signalling system. The points must be left in normal when not in use.

6.12 Staircase - RP6364 Signal

As the sighting of the Up Arrival signal No.6364 at the west end of Staircase is restricted, a repeater permissive signal known as RP6364 and equipped with an ‘L’ light, has been located 140 metres in advance of the Arrival signal. The repeater signal would normally display the indication displayed on the arrival signal but when RP6364 is displaying a Stop indication the following procedure will apply:

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- ‘L’ light not illuminated – the movement must stop and after 10 seconds proceed cautiously (line may be occupied/obstructed or 6364 signal may be at Stop).
- ‘L’ light illuminated – the movement may proceed without stopping at Signal RP6364 which will have the ‘L’ light illuminated. The movement must not exceed 25 km/h.
- If it is necessary for a shunting movement to propel back past signal RP6364 and the movement has not cleared this signal, then the ‘L’ light will not illuminate. The conditions of **L6.2 Midland Line Automatic Signalling Rules 3. Working of a Crossing Station** apply.

6.13 Slip Warning Systems

6.13.1 Staircase and Craigieburn

A slip detection system, consisting of Tilt Sensors, is located at 69.80 km at an existing slip.

The array will when movement is detected by the sensor tilts beyond the pre-defined angle:

- send an alarm to the Train Control Realflex signalling screen, reading ‘Fence Midland 69.800 km - Slip Detected’, or ‘Tilt Sensor Midland 69.800 km - Slip Detected’.

The Train Controller upon receiving activation of the slip warning system will:

- Advise Operators of the slip alarm activation, and stop any train clear of the slip alarm area.
- Advise Operations Support to arrange Infrastructure personnel to undertake an inspection.
- Infrastructure personnel will advise the Train Controller if it is suitable to run trains through the slip alarm area, and if a temporary speed restriction is required.
- If a temporary speed restriction is required, the Train Controller will enter details into the Access Provider’s Speed Restriction system and identify any trains to be advised as per **Train Control and Signal Box Manual**, **2.6 Identifying Trains 'still to be advised' of Temporary Speed Restrictions.** When required, the procedure for no speed boards, as stated in **RP15 Implementing Temporary Speed Restrictions, 3. Unplanned Speed Restrictions**, must be followed.
- Upon receiving clearance from the Track Maintenance Representative, and the alarm system remains operative in the field, the Train Controller will arrange a reset of the alarm by requesting Operations Support to contact the Harvest Engineer who will reset the alarm remotely.
- If the alarm mechanism has been damaged and needs re-configuration, Civil Engineering will arrange for a technician to attend and advise the procedure for running trains.

6.13.2 Cora Lynn and Arthur's Pass

A slip detection array is located at 104.952 km at an existing slip.

When movement is detected by the trip wire, the array will:

- send an alarm to the Train Control Realflex signalling screen, reading **‘ML 104.952K SLIP’**.

The Train Controller upon receiving activation of the slip warning system will:

- Advise Operators of the slip alarm activation, and stop any train clear of the slip alarm area.
- Advise Operations Support to arrange Infrastructure personnel to undertake an inspection.
- Infrastructure personnel will advise the Train Controller if it is suitable to run trains through the slip alarm area, and if a temporary speed restriction is required.
- If a temporary speed restriction is required, the Train Controller will enter details into the Access Provider’s Speed Restriction system and identify any trains to be advised as per **Train Control and Signal Box Manual**, **2.6 Identifying Trains 'still to be advised' of Temporary Speed Restrictions.** When required, the procedure for no speed boards, as stated in **RP15 Implementing Temporary Speed Restrictions, 3. Unplanned Speed Restrictions**, must be followed.
- Upon receiving clearance from the Track Maintenance Representative, and the alarm system remains operative in the field, the Train Controller will arrange a reset of the alarm by requesting Operations Support to contact the Harvest Engineer who will reset the alarm remotely.

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- If the alarm mechanism has been damaged and needs re-configuration, Civil Engineering will arrange for a technician to attend and advise the procedure for running trains.

6.14 Turnouts / Points awaiting Commissioning

New Turnout Arthur's Pass – Otira

A new turnout has been installed at 116.884 km between Arthur's Pass and Otira. The new turnout has been bolted and secured with a PS padlock for main line running.

If it is necessary to open these points both Signals and Track Maintenance Representatives for the area, must be in attendance. Permission of the Train Controller must be obtained before the points are unlocked. The Train Controller must be advised when the points are again padlocked.

6.15 Train Safety Procedures between Springfield and Arthur's Pass

These instructions are in addition to those for Train Control radio outlined in the **Radio Systems Manual.**

Between Springfield and Arthur's Pass the track traverses often remote territory which is susceptible to extreme weather conditions. In the event of it being necessary to provide assistance to a train operated by one person, special resources may be required for transport or emergency purposes.

6.15.1 Severe Weather - Snow

Midland Line between Springfield and Arthur's Pass

On receipt of a Severe Weather Warning (snow) for the Springfield to Arthur's Pass area, the Network Control Manager shall implement the following procedures:

1. Advise all the available weather information to **##**
2. Convene a conference call to confirm that the following procedures are being implemented, consisting of :
   - KRF South Island Regional Manager
   - KRF West Coast Manager ##
   - KRF Christchurch Managers ##
   - South Island Infrastructure Manager
   - South Island Passenger Services Manager
   - Otira Ganger ## (call sign 46278)
   - West Coast Production Manager
   - Upper South Island Production Manager
   - Linehaul Service Manager
3. The NCM holds a list of local helicopter operators that can respond for access to remote locations, for operational purposes.

NOTE

A response to an emergency or life threating situation will normally be through emergency services, who will co-ordinate the response resources requirements, including helicopters.

The Production Manager or Asset Engineer shall implement the following procedures on receipt of a Severe Snow Warning:

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1. A member of Infrastructure team at Otira is placed on standby to respond to any emergency that may occur during the severe snow event (being off work, however but being able to respond from their depot location at short notice i.e., 15 mins)
2. Ensure that a Track Maintenance Representative is on board any light locomotive runs (Snow Plough) departing Otira. The Track Maintenance Representative must be chainsaw competent and shall carry:
   - A chainsaw to clear any fallen trees or power poles.
   - A spade to clear built up snow on the front of the locomotive for improved visibility.
   - Essential features list for the area

NOTE
The chainsaw can only be used in areas where the power supply has been confirmed as disconnected by a Signal Maintenance Representative.

3. Deploy a Hi-Rail digger and operator to the Arthur's Pass – Otira area to be on standby throughout the snow event.
4. Contact the local roading contractors to discuss the plans that are being implemented to clear roads in the affected areas and any possible synergies with the resources that KiwiRail are deploying.

Track Maintenance Representatives and Locomotive Engineer on board the light locomotives before departing Springfield or Arthur's Pass will confirm how they will identify the:

- features within the network for situation awareness.
- power supply area that has been confirmed disconnected.
- likely hazards (fallen trees, poles, etc.)
- need to clear snow for visibility.
- agreed locations, where the Train Controller will be contacted to confirm progress.

KiwiRail Freight West Coast Manager shall implement the following procedures on receipt of a Severe Weather warning (snow):

- Arrange Banker LE coverage to be extended to 24hrs during a severe snow event in case of an emergency.

The **Linehaul Service Manager** shall rearrange train services to best meet customer demand and keeping the track clear, however this must ensure that personnel safety is not put at risk.

Keeping regular train services moving through the area the best way to keep the track clear, however running through the middle of the night is not ideal as vision and access may be restricted.

This can be achieved by closing the track on the clearance of 844 and reopening it with WT86 (Snow Plough) run departing Middleton at 0600hrs (picks up a Track Maintenance Representative at Springfield equipped with a chainsaw etc.).

It may also be relevant to run the Banker locos eastward similarly crewed.

Snow Plough (WT86)

Will run as required using light locomotives (with Snow Plough attached). Dynamic brakes on all locomotives must be operative before departure.

Where snow is lying on the ground, the following conditions apply:

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- 50 km/h maximum speed
- 15 km/h over all facing points
- 10 km/h over all level crossing (includes private level crossings)
- Brakes must be tested frequently
- Restricted Speed to be applied when approaching locations shown on the essential features list

NOTE
The Snow plough end is unable to be coupled to other rail vehicles

6.15.2 Track Inspections

Should conditions be encountered while travelling through the area such that the Locomotive Engineer considers a track inspection is necessary, then the Train Controller must be advised in accordance with **GR06 Conditions Affecting the Network, 10.1 Notification.**

6.15.3 Midland Backup Radio System

In the event of a failure of the Train Control radio system between Arthur's Pass and Christchurch, the Midland Backup Radio system provides a radio system for emergency communications using the Midland Backup (Tait TP8110) portables that is independent to Train Control Radio System.

The Midland Backup radio system is not a substitute for the primary Train Control radio communication system. It lacks the alert alarm facilities and coverage provided by the principal system.

Radio coverage is provided by FM E band repeaters located at the Cass Sugarloaf and Woodstock sites. No radio equipment is common to the Train Control system.

Both road and rail coverage will be provided for most of the route between Springfield and Arthur's Pass and will essentially be continuous (i.e., breaks not exceeding 500 metres) except for the following areas:

- All tunnels
- Rail:
  - 5 km immediately east of Arthur's Pass
  - 1.3 km near Tunnel 16
- Road:
  - 6 km immediately east of Arthur's Pass
  - 1.9 km gap near Craigieburn Ski Club turn-off
  - 1 km gap at Castlehill Village
  - 1 km gap 3.4 km east of Porters Pass

The Midland Backup portable radio will have a base call facility to provide the Train Controller with an audio / visual indication that a portable radio user wishes to communicate. The Train Controller is provided with a separate desktop microphone and monitor speaker for the system.

Should the locomotive radio itself fail, the Midland Backup (Tait TP8110) portable radio can be used to communicate with the Train Controller over the Train Control Radio System channels. To conserve battery power the radio should only be switched on when required.

The portable radio should at least be held outside the locomotive cab or better still from the running board (both sides) to obtain the best reception.

Locomotive Engineers should use channel 6 for east of Avoca (rail) and Porters Pass (road) otherwise use channel 7. When in the vicinity of Avoca (rail) or Porters Pass (road) try both channels.

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6.15.4 Midland Backup (Tait TP8110) Portable Test

All rail users must test the portable with the Train Controller:

- before departing Springfield on channel MID 6
- eastbound after departing Arthur's Pass, test about 6 km (rail) [Bealey Bridge area] on channel Mid 7

Motor vehicle user portables must be tested at Springfield on channel MID 6 and 7 km (road) east of Arthur's Pass on channel MID 7.

6.15.5 Compulsory Radio Calls / Train Control Radio Failure

It is important that the location of a train between Springfield and Arthur's Pass be accurately defined should it not reach a destination or crossing place within the expected timeframe.

Compulsory calls are to be made from the following locations:

- Springfield
- Staircase
- Craigieburn

Notice boards have been erected at these locations.

At each compulsory call location, the Locomotive Engineer must base call the Train Controller in accordance with the radio instructions outlined in the **Radio Systems Manual.**

The Train Controller upon receiving a radio call from such locations will acknowledge the call as soon as possible and must record the progress of the train with the time called on the train control diagram.

Should a locomotive radio base call to the Train Controller not 'lock on' (green light continues to flash) within the usual timeframe, the Locomotive Engineer is to voice call from the compulsory call location.

If no reply is received from the Train Controller, and a 'lock on' has not occurred:

- a further attempt is to be made
- If this is unsuccessful, it should be presumed that a failure of the Train Control radio system has occurred, and the Midland Backup radio is to be used to contact the Train Controller.

If it is necessary to stop the train and leave the cab to establish communication, the Locomotive Engineer should remain in the vicinity of the locomotive unless it is necessary to establish contact with the Train Controller, protect the train or provide for their own safety.

When contact is established with the Train Controller via the Midland Backup radio system the train may proceed cautiously with the Locomotive Engineer calling the Train Controller at agreed time intervals not exceeding 15 minutes. The 'timer' provided in the Train Control radio computer system is to be activated and the details endorsed on the train control diagram in red ink. When the Train Controller is required to deal with several consecutive calls the timer will need to be re-activated for these calls with the next expected call always being the one which is timed.

NOTE
If the radio computer system has failed in this situation, then the Network Control Manager is to ensure calls are received by the Train Controller at the arranged times.

In the event of adverse weather conditions prevailing, the Locomotive Engineer will advise the Train Controller who will inform the Network Control Manager. The Network Control Manager must first

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ensure emergency rail personnel are aware of the situation and then will consult with the Rail Operator to decide the appropriate action, giving due consideration to instituting double crewing of all trains before they enter the Springfield–Arthur's Pass area.

The Train Controller must establish the extent and reason for the 'E' band radio failure.

If a Locomotive Engineer has reasonable cause for believing their safety is at risk by proceeding into or continuing in the Springfield–Arthur's Pass area without the Train Control Radio system being operative, the train may remain at the first station that allows road access until a second locomotive running person has arrived or other suitable arrangements have been put in place. Locomotive Engineers shall not act unreasonably under this clause. In all cases where the Train Controller is aware the primary Train Control Radio system has failed, the Locomotive Engineer is to be informed of the situation.

If the Train Controller does not hear from the train at the expected times, arrangements should be made to find out why the train has been delayed using the Midland Backup radio system. If no response is received within 15 minutes, arrangements are to be made for Emergency Personnel or services to be called to locate the train.

Motor Vehicles

Should a Locomotive Engineer driving a motor vehicle for crew change purposes via State Highway 73 encounter inclement weather or be concerned about the effects of heavy frosts, the Train Controller is to be contacted using the Midland Backup radio system and an agreed call time established.

The 'timer' provided in the Train Control radio computer system is to be activated and the details endorsed on the train control diagram in red ink. Also refer to the note instruction in the first paragraph.

If no call is received at the expected time of arrival at a calling location, the Train Controller will attempt to call the motor vehicle. If no response is received within 15 minutes, arrangements will be made for Emergency Personnel or services to be called to locate the motor vehicle.

6.15.6 Hi-Rail Vehicle at Otira

During the hours that Track Maintenance Representatives are on duty, access to the Hi-Rail vehicle can be obtained by telephoning:

- Otira office - 03 769 8256, or
- Train Control (telephone 43367 or public telephone 04 498 3367), which is in Selcall radio contact with the vehicle.

Track Maintenance Representative at Otira, have access to a portable radio for the Midland Backup radio system.

6.15.7 Hi-Rail Vehicle at Springfield

During the hours that Track Maintenance Representatives are on duty, access to the Hi-Rail vehicles can be obtained by telephoning:

- (public phone) Springfield 03 318 4843 (Ganger), or
- Train Control (telephone 43367 or public telephone 04 498 3367), which is in Selcall radio contact with the vehicles.

The Track Maintenance Representative Hi-rail vehicle is also equipped with a portable radio which can access the Midland Backup radio system.

6.15.8 Additional Rescue Support Services

In an emergency, the assistance of Police and other emergency services is to be sought as normal practice. Police have an emergency plan for Midland Line operations which include accessing the Search and Rescue squad, rescue helicopter and Urban Search and Rescue (USAR).

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The Police telephone number at Christchurch is 03 379 3999 (ask for Control) or 111.

6.15.9 Personnel who Require First Aid Skills

All Rail Personnel available for emergency callouts must be trained and certified in First Aid procedures by a recognised training authority.

6.15.10 Train Crew - PPE

Locomotive Engineers must ensure they have sufficient warm clothing before operating trains on this route regardless of climatic conditions at Christchurch / Otira and Greymouth.

If leaving the locomotive cab, the Locomotive Engineer must take the thermal blanket provided.

6.15.11 VHF Portable Radio for Emergency Purposes

When a train has stopped with portions of the train on both sides of a tunnel, the UHF portable will not operate. When this occurs, the Locomotive Engineer should request that the person who is going to assist, take a VHF portable in addition to the normal equipment.

The Train Controller must confirm with both the Locomotive Engineer and the person assisting about when they will call the Train Controller while the VHF portables are in use. The radio computer timer is to be used.

Once permission has been given for personnel to use the train radio system, the Train Controller should not permit or carry out transmissions on the Midland or West Coast radio repeater system.

6.15.12 Operation of the Midland Backup Radio System

The Midland Line back-up system consists of two 'E' band repeaters located at Woodstock and Cass operating on two different frequencies. Train Control is connected to these repeaters by means of two trigger bases located at Midas Place, Middleton and operated simultaneously by means of Remote-Control Units (RCUs) located in both SI Coal Route and SI Main Train Control positions.

The RCUs consist of the basic Tait remote unit with a Toa microphone and a Sigtec Automatic Number Identification (ANI) unit which displays the ID of calling radios.

Locomotive Engineer's Portable Radio

Locomotive Engineers are equipped with Tait TP8110 portable radios that feature multi-channel operation with channel scanning and unique Selcall identity:

Orange face – Christchurch radios

Yellow face – Greymouth / Otira / Westport radios

Channels	Explanation
1	Locomotive – ground channel (simplex)
2, 3, 4	Train Control channels (with base call)
5	Track and Structures protection channel (simplex)
6, 7, 8, 9, 10, 11, 12, 13, 14	Train Control channels (with base call)
15, 16	Simplex
MID6	Woodstock (Springfield) back-up repeater – Train Control
MID7	Cass back-up repeater – Train Control
MID8	Cass back-up repeater – Regional Council

On Tait TP8110 portables, use selector switch on top of radio to access channels 1-16.

Use **<** or **>** key (on front of radio) to scroll channels and access **MID6, MID7, MID8, SCAN**

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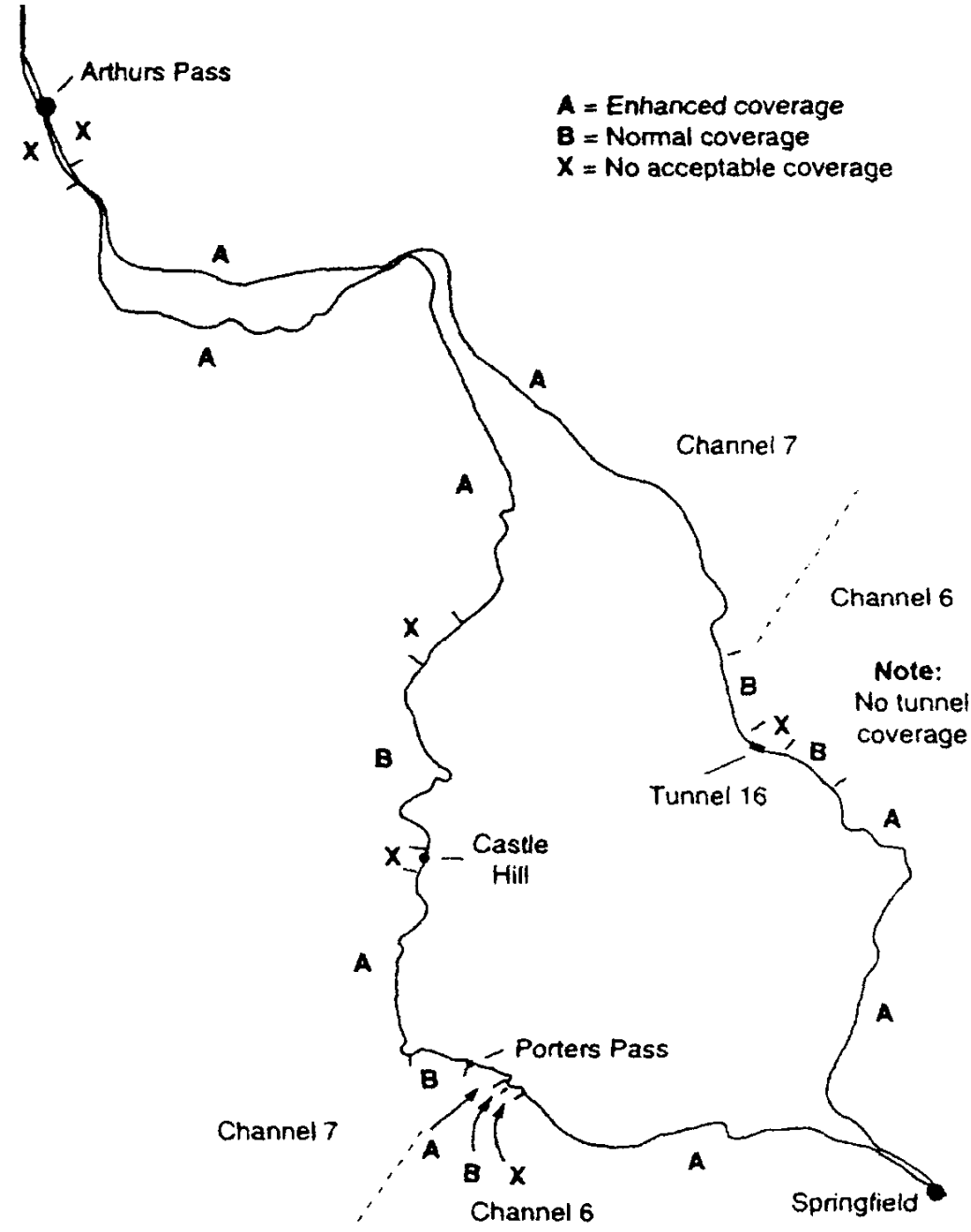
Track and Structures Protection and Midland Back up Channels		Coverage
Channel MID6	for Woodstock	Rolleston-Porters Pass (road) Rolleston-75km (Rail)
Channel MID7	For Cass	Porters Pass-Arthur's Pass (Road) 75km-Arthur's Pass (Rail)
Channel MID8	Also, Cass, but communicates to the Regional Council, which also uses this repeater	Porters Pass-Arthur's Pass (Road) 75km-Arthur's Pass (Rail)



COVERAGE MAP - MIDLAND RADIO BACK-UP SYSTEM

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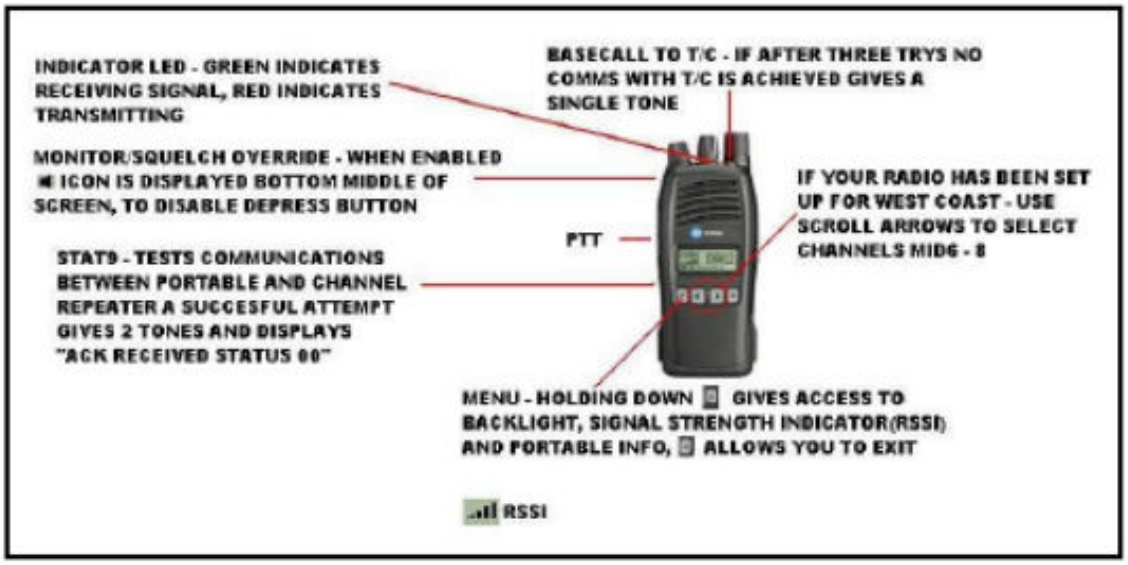
Radio Operation



- To send a Base Call to Train Control, select the correct channel – press and hold the orange button on the top of the radio.
- Midland back-up channels are labelled MID6, MID7, MID8 and can be accessed using < or > keys.

Mobile / Station Radios

- Crew vehicle and station radios are being replaced with Tait TM8200 radios.
- These have the same channels as shown on following page, along with three back-up channels labelled MIDLAND 6, 7, 8.

Transmitting

Select the required channel, monitor for activity then press the PTT and speak clearly into the speaker grill at a distance of approximately 8 cm.

Should channels 6–8 be in use (bi-colour LED will flash green) and the PTT pushed then a warning tone will be heard.

Selcall

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To transmit a Selcall to the Train Controller, select required channel then press TX call button once, firmly. This is the second button down on the side of the radio. This will cause the Selcall code to be displayed in Train Control who will then acknowledge.

If the base call function is not used and a voice only call is made, then no indication will appear on the display unit in Train Control. Whenever possible, the base call function should be used but if the Train Controller does not respond after several minutes, then a voice call should be made.

Low Battery Check

The LED indicator on top of the radio shows continuous red when transmitting and flashing red when the battery is low.

6.15.13 Search and Rescue Procedures

In emergency situations when rail / road access is not available to reach Rail Personnel urgently in the Springfield–Arthur's Pass area, the Train Controller are to advise the Christchurch police who are to be given full details of the circumstances. Because of the inaccessibility of the track between Cass and Springfield, helicopters with a winch will be considered.

In addition, as there is very little room between trains and the tunnel walls, a practiced rescue team will be required (i.e., USAR). In these circumstances, the Police will consider this to be a Search and Rescue operation because of the terrain and urgency of the incident and will therefore take control of the situation as follows:

O/C Control	Ascertain details
	Appoint
	Search and Rescue Operation Controller#
Search and Rescue Operation Controller – Remain in contact with Train Control (Direct line/unlisted)	
	Consider best mode of rescue
	(1) By rail
	(2) By air
	(3) By road

If emergency is in a tunnel, consider the use of USAR Rescue Team because of a lack of room in the tunnels.

Advise Arthur's Pass Police and Darfield Police. Report to O/C Control on position.

The Train Controller to advise what facilities KiwiRail Network and KiwiRail have available to assist.

The Train Controller will have a list of telephone numbers which are a direct line to Search and Rescue headquarters.

This is an Operation Controller appointed by Search and Rescue and is not a person from the Rail Industry.

6.16 Otarama, Avoca and Cass Banks

6.16.1 Locomotive or Train Failure

NOTE
This procedure is for train handling purposes only.

6.16.2 When Stopped on a 1-in-50 Uphill Gradient

1. Advise the Train Controller of the circumstances.
2. Stop the train with a minimum brake pipe reduction (70 kPa).
3. At the point of stopping apply the independent brake fully on the locomotives.
4. If able to restart train again, advance throttle to notch 2, release train brake, advance throttle to notch 4 to hold train while a recharge of train brakes is obtained. Slowly release the independent brake and advance throttle to notch 5 to start the train.
5. If not able to start the train again, then the setting back procedures for a 1 in 50 gradient will apply.

6.16.3 When Setting Back Down a 1-in-50 Gradient

When Dynamic Brake is Operational

The train brakes may only be released with the train stopped.

1. Advise the Train Controller of the circumstances.
2. Stop train with a minimum brake pipe reduction (70 kPa).
3. At the point of stopping apply independent brake fully on the locomotives.
4. Increase the Brake Pipe reduction to 80 kPa.
5. Set the isolation switch on any defective locomotive to ‘isolate’.
6. Place the reverser to reverse and select Dynamic Brake.
7. Move the Dynamic Brake handle around to full amps position.
8. Wait 50 seconds.
9. Slowly release the independent brake – the train should begin to set back.
10. Regulate the Dynamic Brake to hold the train speed at a maximum of 15 km/h. Dynamic Brake handle position 5 to 6 is all that should be required to balance the speed with the brake pipe reduction once the train has settled.
11. If Train speed exceeds 15 km/h with full Dynamic Brake effort, then increase the brake pipe reduction to regulate the speed as circumstances require.

The train brakes may only be released with the train stopped.

1. Stop the train.
2. Place the reverser to forward.
3. Release the train brakes and advance the throttle to notch 4 (this will hold the train until the brake pipe is fully recharged when another reduction of the train brakes can be made again to continue with the setting back of the train).

When Dynamic Brake is NOT operational, advise the Train Controller of the circumstances.

1. Stop the train with a minimum brake pipe reduction (70 kPa).
2. At the point of stopping apply the independent brake on the locomotives fully.
3. Increase the brake pipe reduction to 80kPa.
4. Set the isolation switch on any defective locomotive to ‘isolate’.
5. Place the reverser handle to reverse.
6. Slowly release the independent brake on the locomotive until the train starts to set back.
7. Once the train starts setting back use the independent brake on the locomotive to control the train speed at a maximum of 10 km/h by maintaining brake cylinder pressure at 80 to 100 kPa.
8. If train speed exceeds 10km/h with a maximum of 100 kPa brake cylinder pressure on the locomotive, increase the brake pipe reduction on the train brake to regulate the speed as circumstances require.

6.16.4 Burst Hose Procedure

1. Advise the Train Controller.

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2. Apply power and sand until the train pulls to a stop. This conditions the rail for maximum adhesion.
3. Apply the locomotive independent brakes fully. Proceed back along train applying handbrakes on the first 5 wagons.
4. At the point of the burst hose mark the point.
5. Return to the front of the locomotive, hold the brake pipe hose firmly and fully open the brake pipe cock.
6. Leave the brake pipe cock open.
7. In the cab of the lead locomotive, place the Automatic Brake Valve Cut Out to Cut Out position.
8. Proceed back to the burst hose and replace it.
9. Recouple the brake pipe hoses on the wagon and open the air cocks.
10. Continue to the rear of the train checking for any derailment. If the rear of the train is inaccessible, advise the Train Controller.
11. Return to the front of the locomotive and close the brake pipe cock fully.
12. In the cab of the lead locomotive place the Brake Valve Cut Out to the Cut In position.
13. The train brakes will now recharge and once fully recharged make a brake pipe reduction of 100 kPa.
14. Proceed back along the train releasing handbrakes on the wagons.
15. Return to locomotive cab, release train brakes and continue journey.

6.16.5 Vigilance System Reset Procedure

Advise the Train Controller of the circumstances.

1. Move the Automatic Brake Valve handle to the Handle Off position.
2. Wait 50 seconds and operate the vigilance penalty brake reset switch.
3. Once reset, move the Automatic Brake Valve handle to Release and recharge the air brake system.
4. On an up gradient, if required, begin throttling up to notch 4 to hold the train while a full recharge is obtained. Ensure that the PCS light goes out before advancing the throttle.
5. On a down gradient, if required, set up for full dynamic brake prior to resetting the vigilance penalty brake reset switch. Ensure the PCS light goes out before selecting dynamic brake.

6.17 Avoca Bank - Coal Trains

Between 72.80 km and 69.45 km for up coal trains the following will apply:

1. When trains are under serial braking – releasing speed 15 km/h. (Passenger train remains at 25 km/h).
2. For trains of 25 wagons or more: serial braking 10 km/h; dynamic braking 20 km/h.
3. Otherwise, speed of coal trains (more than 20 wagons) not to exceed 40 km/h.
4. Should a train stop due to a burst hose and the Locomotive Engineer can effect repairs, the BP tap on the locomotive headstock should be opened and remain opened until repairs have been completed. Otherwise, assistance is to be requested.

The modified maintaining braking rule for one operational dynamic brake on the Avoca Bank is:

1. Set dynamic brake to a point where only minimal wheel slide correction is taking place.
2. Once dynamic brake is set, use the airbrake to control speed.
3. Maximum speed 40 km/h.
4. Releasing speed 10 km/h.

6.18 Taipo River Alarm

The Taipo River runs towards the Taramakau River on the opposite side of the Kelly and Bald Mountain Ranges from the Midland Line.

The Taipo River is remotely monitored, and alarms are sent when river flow increases.

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When a ‘Neon: Data Alarm’ is received in the Network Control Manager’s and Operations Support office, the following will apply:

Water Flow	Action Taken
> 400 m3/s	A track inspection must be carried out between the Western Portal Otira Tunnel and Inchbonnie.
> 600 m3/s	The Midland Line must be closed between The Western Portal Otira Tunnel and Inchbonnie.
When the Data Alarm advises that the flow has dropped below 400 m3/s, a track inspection must be carried out before the line between the Western Portal Otira Tunnel and Inchbonnie is reopened.	

6.19 Radio Calls Jackson and Moana

Jackson and Moana are radio call locations for all trains. Notice boards are erected.

Locomotive Engineers are to base call the Train Controller who will acknowledge the call as soon as possible and must record the progress of the train and endorse with the time called, on the train control diagram.

Should a locomotive radio base call to Train Control not ‘lock on’ (green light continues to flash) within the usual time frame the Locomotive Engineer is to voice call. If no reply is received or a ‘lock on’ has not occurred it should be presumed that a failure has occurred, and the train is to proceed provided the train has the appropriate authority with contact being made through the back up radio system.

6.20 Kokiri

6.20.1 Vehicles Left Unattended on Loop

Rail Vehicles can be left unattended on the loop at Kokiri provided the following safeguards are taken:

- handbrakes are firmly applied on all locomotives and 1 in 4 wagons.
- the locomotive reverser handle is to be removed and kept in a pre-arranged location
- the locomotive cab doors must be locked.

TO01 Train Movements, 10. Securing Motive Power Units and **TO08 Shunting, 7.3 Standing at Stations** are modified accordingly.

6.20.2 Overloaded Coal Wagons

Overload wagons reduced at Kokiri may be conveyed to Stillwater for discharge under the following conditions:

Alert Level	Conditions	Inspections
MEDIUM Axle overload 10 – 15%	Run to Stillwater at 40 km/h	Br.96 must be inspected, and approval given prior to movement of wagon(s) to Stillwater
HIGH Axle overload 15 – 20%	Run to Stillwater at 25 km/h	
EXTREME Axle overload 20 – 25%	Run to Stillwater at 10 km/h	
EXTREME Axle overload above 25%	Not permitted to travel - must remain at Kokiri for discharge	

6.20.3 Phoenix Meat Company Siding

For maintenance purposes, the East runaway at Phoenix Meat Co. Siding is closed to all rail movements.

A Danger Stop sign and derailer have been erected to indicate the closed portion of track within the siding.

6.20.4 Coal Wagon Veneering Facility

A veneering facility has been constructed within station limits at Kokiri (between the east end turnout and departure signal).

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The system is automated; track sensors will activate the RFID readers and when C type coal wagons are detected, these wagons will be sprayed with veneer when passing through the facility.

Speed:

All east bound services conveyed C type coal wagons are restricted to walking pace (5 km/h) when passing the facility.

Speed feedback signs have been installed prior to the veneering facility (located at the 188.25 km Kokiri) to aid drivers.

NOTE
Walking pace (5 km/h) when passing the facility.

Signs have been installed at:

- 188.40 km
- 188.55 km

6.21 Stillwater

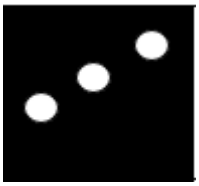
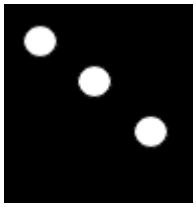
6.21.1 Gangers Control Switches for Points Indicators

The Gangers control switches at the Arrival signals for the triangle at Stillwater have the following additional features:

- The label for the ‘On’ position specifies the route it applies to. The control switch at No. 7 points has two ‘On’ positions, one for each route.
- If the route is not in the desired position when the switch is turned to the ‘On’ position, then the route will set to that selected (provided the conditions are right for the points to do so).
- Up Departure signal No.19634 works in conjunction with the indicators so that a releasing switch is not required. If the Stillwater–Kokiri section is clear, No.19634 signal will clear to ‘Proceed’ when the route is Indicated as being set. If No.19634 signal cannot clear, then the indicators for movements towards that signal will also remain at ‘Stop’.

6.21.2 Route Indicators

A route indicated by 8L Indicator at the triangle at Stillwater shows the following indications:

	Towards Red Jacks
	Towards Greymouth

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6.21.3 No.7 Junction Points – Automatic Routing

The Train Controller can remotely control the route automatically claimed by a train approaching 8L signal at Stillwater. The auto claim route can be set by the Train Controller operating the ‘G’ (to / from Greymouth) or ‘W’ (to / from Westport) command only when all approach track circuits at Stillwater are unoccupied.

All trains approaching 8L signal may receive either a Yellow or ‘A’ Light indication for either route depending on the setting of the auto route by the Train Controller.

NOTE
If the auto route is set by the Train Controller for Greymouth, Up trains will automatically claim 8R signal (without need to operate the pushbutton) and receive a clear proceed aspect provided 19634 signal is also at proceed.

NOTE
If the route is set towards Greymouth, any train or activity occupying ‘L’ track circuit will cause the route to set and clear for the Ngakawau route, unless signal blocking has been applied to No.7 points.

6.21.4 Up Departure Signal No.19634

Directing signal 8R and Arrival signal 6R work in conjunction with Up Departure signal No.19634.

Except as described in (e) the Directing signal 8R and Arrival signal 6R cannot indicate a route set through the junction unless No.19634 signal is displaying a Proceed indication.

No.19634 signal is not equipped with a signal lever or releasing switch. **L6.2 Midland Line Automatic Signalling Rules 3. Working of a Crossing Station** is modified accordingly.

a. When a train approaches 6R signal, No’s 5 and 7 points will usually set for that movement towards No.19634 signal and if the section ahead is clear, then the signal will clear to ‘Proceed’, then the signal will show Nos. 5 and 7 points are set in the proper position.
b. When a train is standing at either 6R or 8R and the controls are used to set the route towards No.19634 signal then the signal will also clear when the route is set if the section ahead is clear.
c. When a train approaches 8R, Directing signal and No.19634 signal will remain at Stop until either:
    i. One of the signal controls for 8R is operated, or
    ii. An opposing train from Kokiri arrives and clears the junction on to the Stillwater-Ngakawau Line.

When the route is set towards No.19634 signal, the signal will clear to ‘Proceed’ and if the section ahead is clear, then the signals will show the points are set in the proper position.

d. When the controls for either 6R or 8R are operated to restore the Signal to Stop while No.19634 signal is at ‘Proceed’ then that signal will also be restored to Stop.

This will also cancel the claim for the Stillwater-Kokiri section in a similar manner to the releasing switch at a crossing station in the Midland Line Automatic Signalling area.

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e. When part of a train in the Stillwater-Kokiri section is left on the main line approaching 8L, while the locomotive proceeds forward beyond 6R or 8R then the door of the control box at 8L must be closed before the locomotive proceeds past the signal. It will be possible to obtain a route for the locomotive to return to the train from either 8R or 6R by operating the signal control buttons at the relative control box. In these circumstances No.19634 signal will not clear and the normal procedure for passing the Departure signal at Stop must be followed. When the remainder of the train is ready to proceed the control box at 8L must be opened and if a light for the correct route is not displayed the appropriate control buttons must be operated to obtain a light on the signal for the train to move forward. The 8R or 6R signal will not operate for a locomotive to return to the train if the door of the control box at 8L was not closed before the first movement past 8L.
f. When part of a train in the Stillwater - Red Jacks section is left on the main line approaching 6R while the locomotive proceeds forward, then similar provisions to (e) apply except when the movement is into and out of the loop via No. 5 points.
g. When a locomotive which has made a trailing movement through No.5 points and is standing at 6R (or through No.7 points and is standing at 8L is to reverse direction), it will automatically get an indication to pass the arrival signal unless the control box adjacent to that arrival signal is opened and reclosed.
h. A train must not stand between the arrival signals 6R and 8L on the triangle when a route is required to be changed.

Working of Stillwater 'B' Down Loop to Siding Points

'B' Down Loop to Sidings points can be released in either of two ways:

1. When shunting from the loop:
   a. Release the TW Lever Lock on the Permission Lever and reverse the permission lever.
2. When shunting from the main line:
   a. Release the TW Lever lock on No. 9 Main to Loop Crossover and reverse No. 9 Crossover.

6.21.5 Stillwater (CIMW) Site

A coupled in motion weighbridge is installed at 193.50 km. Fault conditions are alerted to the Train Controller and broadcast locally by radio on Channel 1.

Locomotive Engineers hearing a warning message must:

- obey any message instructions to reduce speed or stop, and
- must immediately contact the Train Controller for further instructions.

6.21.6 Train Movements

The Train Controller is the Signaller Stillwater for the purpose of **SO02 Automatic Signalling Rules, 8. Interlocked Stations.**

All trains entering or passing through Stillwater must hold a valid Operating Instruction.

4R, 6R and 8L arrival signals (with 'A' lights) and 3TIA, 3TIB, 3TIC and 5TI points indicators are installed in Midland Line Automatic Signalling territory. These signals and indicators may only be passed at Stop in receipt of verbal authority from the Train Controller.

L6.2 Midland Line Automatic Signalling Rules, **3. Working of a Crossing Station, (b)(c)(f)** are modified accordingly.

Signals & Points:

The position of No.3 and 5 points will be indicated to the Train Controller, but the Train Controller cannot move these points, they can be operated by local pushbutton.

No.7 points will be indicated to the Train Controller, and the Train Controller will be able to move these points provided the approach tracks to 4R, 6R and 8L signals are unoccupied.

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The Train Controller will be able to ‘lock’ the points in their indicated position which will hold the associated signals / indicators at stop. Local pushbuttons will not operate when a ‘lock’ is on. A lock will remain on in the event of a power failure.

No.1, 9 and 11 points are lever locked points and will show normal detection to the Train Controller. No detection will be displayed when open / reverse. Track Warrant keys will be used to open these points.

A and B loop to yard points are secured by TW lever locks. They are not detected to ‘L’ lights. Operators must satisfy themselves the points are in the correct position before passing over them.

L6.2 Midland Line Automatic Signalling Rules, **3. Working of a Crossing Station (e)** is modified accordingly.

Crossing of Trains:

The first train to approach Stillwater will lock the route.

All down trains, that are to cross at Stillwater, will take the crossing loop unless otherwise instructed by Mis.51.

All trains standing on the crossing loop will be advised in the Other instruction clause of the Mis.51.

- Trains locked in the siding will not be advised on the Mis.51

Up trains from Greymouth with a crossing, must stop short of the fouling board at No.9 points until:

- Arrival of opposing trains, or
- The Train Controller’s authority to enter the block section has been obtained.

Signalling Failure:

Signalling within station limits Stillwater (excluding 19634 signal) must not be suspended in accordance with **L6.2 Midland Line Automatic Signalling Rules, 8. Suspension of Automatic Signalling.**

In the event of a signalling failure, trains must work within station limits in accordance with **SO02 Automatic Signalling Rules, 8. Interlocked Stations.**

Track Occupancy:

The movement of Hi-Rail vehicles and the authorisation of track occupancy within Stillwater station limits will be in accordance with **TS04 Compulsory Stop Protection** and **TS06 Blocking**.

The method of protection will be the application of **TS06 Blocking** by the Train Controller by applying a ‘lock’ to the signals / indicators protecting the occupancy.

NOTE
Double blocking is not available.

6.22 Slip and Bridge Alarms Stillwater - Brunner

6.22.1 Slip Alarm 198.70km Midland Line

A slip detection array is located at 198.70 km between Stillwater and Brunner at a new slip.

The array consists of eight tilt sensors and a camera which will take a series of photos during the day and an infrared photo of the slip at night if movement is detected. The camera will be aimed at the track

to determine whether slip debris has reached the track as the unstable ground is located approx. 30 metres from the track. Minor slip instability may not reach the track.

When movements are detected and a sensor tilts beyond a pre-defined angle, the sensor will:

- send an alarm to the Train Controller's signalling screen, and
- send an email to Operations Support and the Network Control Manager.

The Train Controller upon receiving activation of the slip warning system will:

- advise Operators of the slip alarm activation, and stop any train clear of the slip alarm area
- advise Operations Support to arrange infrastructure personnel to undertake an inspection.

Infrastructure personnel will advise the Train Controller if it is suitable to run trains through the slip alarm area, and if a temporary speed restriction is required.

If a temporary speed restriction is required, the Train Controller will enter details in the Access Provider’s Speed Restriction system and advise any trains that are already running.

Upon receiving clearance from infrastructure personnel to run trains, the Train Controller must not allow any trains to traverse the slip until the slip warning system has been reset, or infrastructure personnel are at the 198.70 km to pilot the train over the slip.

Operations Support will work with Harvest to reset the alarm and advise the Train Controller when the reset is complete.

6.22.2 Bridge No.106 Alarm Midland Line

An Extensometer alarm (Harvest) has been attached to the side wall of the abutment on Bridge No.106 at 198.250km between Stillwater and Dobson.

Should the Extensometer detect movement from the side wall, the Harvest alarm system attached to the Extensometer will then:

- send an alarm to the Train Control signalling screen, and
- send an email to Operations Support and the Network Control Manager.

Upon receiving activation of the Bridge 106 alarm, the Train Controller must:

- advise Operators of the alarm activation, and stop all rail vehicles clear of Bridge No.106
- advise Operations Support to arrange Infrastructure personnel to undertake an inspection.

If a temporary speed restriction is required, the Train Controller must enter details into the Access Provider’s Speed Restriction system and advise any trains that are already running.

Upon receiving clearance from Infrastructure personnel to run trains, the Train Controller must not allow any train to traverse Bridge No.106 until the warning system has been reset, or Infrastructure personnel are onsite to pilot trains over Bridge No.106.

Operations Support will work with Harvest to reset the alarm and advise the Train Controller when the reset is complete.

6.23 Slip Alarm Stillwater - Dobson

A slip detection array is located at 200.119 km between Stillwater and Dobson at an existing slip.

The array consists of four tilt sensors which are activated when movement is detected and a sensor tilts beyond a pre-defined angle which then:

- sends an alarm to the Train Controllers signalling screen, and

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- sends an email to Operations Support & the Network Control Manager.

The Train Controller upon receiving activation of the slip warning system will:

- advise Operators of the slip alarm activation, and stop any train clear of the slip alarm area.
- advise Operations Support to arrange infrastructure personnel to undertake an inspection.
- Infrastructure personnel will advise the Train Controller if it is suitable to run trains through the slip alarm area, and if a temporary speed restriction is required.
- If a temporary speed restriction is required, the Train Controller will enter details in the Access Provider's Speed Restriction system and advise any trains that are already running.
- Upon receiving clearance from infrastructure personnel to run trains, the Train Controller must not allow any trains to traverse the slip until the slip warning system has been reset, or infrastructure personnel are at the 200.119 km to pilot the train over the slip.
- Operations Support will work with Harvest to reset the alarm.

6.24 Slip Alarm Omoto

A slip detection array is located between 208.50 km and 209.00 km at an existing slip.

The array consists of a number of tilt sensors which are activated when movement is detected and a sensor tilts beyond the pre-defined angle which then:

- sends an alarm to the Train Controllers signalling screen, and
- send an email to Operations Support & the Network Control Manager.

The Train Controller upon receiving activation of the slip warning system will:

- advise Operators of the slip alarm activation, and stop any train clear of the slip alarm area
- advise Operations Support to arrange Infrastructure personnel to undertake an inspection
- Infrastructure personnel will advise the Train Controller if it is suitable to run trains through the slip alarm area, and if a temporary speed restriction is required
- if a temporary speed restriction is required, the Train Controller will enter details in the Access Provider's Speed Restriction system and advise any trains that are already running
- upon receiving clearance from infrastructure personnel to run trains, the Train Controller must not allow any trains to traverse the Omoto slip until the slip warning system has been reset, or infrastructure personnel are at the 208.50 – 209.00 km to pilot the train over the slip.

6.25 Greymouth

6.25.1 XR and XL signals

- A switch out facility is provided with the XR / XL signal controls and when switched out, XR and XL signals will clear automatically on the approach of a train.
- When switched in, XR and XL signals are controlled from the XR / XL signal controls at Greymouth Marshalling Yard. The signals will clear only when a train is on the relevant approach track circuit.
- XL signal can be placed at Stop and re-cleared from the XL signal control at Greymouth. (This will only operate when the signal controls at Greymouth Marshalling Yard are switched out).

6.25.2 Greymouth Freight

Notice boards worded 'All Trains must be Piloted Beyond this Point' are situated at the main line turnouts to the Marshalling Yard / Locomotive Depot.

6.25.3 Protection of Train Movements

All movements between these notice boards must be piloted by a member of the Yard personnel appointed by the Officer in Charge.

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Before authorising any movement between these notice boards the Officer in Charge must ensure the points are set in the correct position for the intended movement.

The Officer in Charge must not authorise any movement past XL signal for Down trains or the ATS board situated south of the Marshalling Yard for Up trains until making sure it is safe to do so and that a pilot will meet the train at the appropriate notice board.

6.25.4 Berthing of Trains while Personnel not in attendance

To enable trains to be berthed while personnel are not in attendance, the following instructions apply:

- Before finishing duty, the Rail Operator must advise the Train Controller which roads the incoming trains will berth on.
- On arrival at the Pilot board the Locomotive Engineer of the train concerned must call the Train Controller to get permission to pass the board and be advised by the Train Controller on which road the train will berth.
- The Locomotive Engineer must advise the Train Controller when the train has been berthed.

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7. Hokitika Line

7.1 Locomotive UHF Portable radios

On ATC freight trains of more than 250 metres stopped between the 18.00 km and 19.00 km (Serpentine area) and the Locomotive Engineer is required to leave the locomotive cab and proceed more than 250 metres from the locomotive, assistance should be requested as communication with the Train Controller may not be possible on the UHF portable radio.

7.2 Flood Control Barrier

At the 1.927 km (adjacent to Raleigh Street Level Crossing) – when advised by the Grey District Council Work Group Leader that the flood control barrier is required to be erected, the Hokitika Line is to be closed to all rail traffic until the barrier is removed.

7.3 Kumara Siding Axle Load

The maximum axle load permitted on Kumara Siding is 14.0 tonne.

Reason: Bridge 16 (applies to siding line only)

7.4 Kumara (SH6) Level Crossing Alarms

Due to rusty rail conditions on the Kumara siding the level crossing alarms at the State Highway 6 crossing (17.46 km) may not activate for a train departing the south end of the siding towards Hokitika until the train enters onto the main line.

South End Main Line Points

As a safeguard, the south end main line points have been locked in normal and can only be operated when Signals personnel are in attendance.

7.5 Train Arrivals

On arrival of a train at Hokitika or Greymouth, the Train Controller is to be advised. If a train does not arrive at the expected time at Hokitika or Greymouth and the Locomotive Engineer cannot be contacted, the Train Controller is to arrange for a Track Maintenance Representative with a Hi-Rail vehicle to locate the train and advise the Train Controller.

If the Ganger travels by rail into the section where the train may be stopped then the train, if possible, should be approached from the rear.

7.6 All Trains Stop Board Hokitika

No down train may pass the ATS board unless authorised to do so by the Shunter in Charge who is to work the movement.

7.7 Gibson Quay, Hokitika

Due to poor track conditions, the speed of all shunting movements from the south end of the Yard to Trans West Limited Private Siding on Gibson Quay must not exceed 10 km/h.

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8. Rapahoe Branch

8.1 All Trains Stop Board

An All Trains Stop board is 50 metres south of the TW notice boards at Rapahoe. After obtaining permission from the Rail Operator, the Locomotive Engineer may pass the All Trains Stop board and enter the Rapahoe yard.

8.2 Noise Levels Rapahoe Yard

To assist with keeping noise levels in Rapahoe Yard within acceptable levels the following apply:

- When loading at Rockies, wagons are to be loaded towards Rapahoe Yard
- Wagons are only to be loaded when moving up hill
- Train movements are to be controlled by use of the locomotive throttle. The independent brake is to be used only when necessary
- The locomotive horn is only to be used in emergency situations when in the vicinity of Rapahoe Yard
- The maximum train speed within Rapahoe Yard must not exceed 10 km/h.

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9. Stillwater – Ngakawau Line

9.1 Testing of Tunnel Radio System Stillwater - Ngakawau

Test of Train Control to Train Crew radio link between Stillwater and Ngakawau.

Track Maintenance Representatives who have received special training will test the tunnel radio systems in a Hi-Rail vehicle as follows:

Tunnel	Normal Test Days
Tunnel 1 (between Tawhai–Reefton)	Thursday
Tunnel 2 (between Mackley–Tiroroa)	Monday
Tunnel 4 (between Tiroroa–Te Kuha)	Monday

When the Hi-Rail is in the appropriate tunnel and positioned correctly:

1. Select the correct Train Control radio channel.
2. Press the *button to send call (where appropriate).
3. The Train Controller will hear this, but nothing will be displayed on the MSP Radio computer screen.
4. A reply will be sent automatically to the Hi-Rail vehicle with 2 selcall tones.
5. Once 2 selcall tones close together have been heard then the system is operating correctly.
6. The Hi-Rail driver must advise the Train Controller of the test results, this information is to be noted on the train control diagram and Operations Support contacted for any reported faults.

If the Hi-Rail vehicle cannot perform these tests during any given week:

1. The Train Controller must be advised and arrange for a locomotive to perform the test.
2. In this case the test will be performed by sending a Base Call in the appropriate tunnel and the Locomotive Engineer confirming that the call has ‘locked on’.
3. The Train Controller will confirm that the Base Call was received.

9.2 Rail Vehicles Unattended on Loops

Rail vehicles can be left unattended on the loops at:

- Red Jacks
- Totara Flat
- Reefton and
- Inangahua

provided the following safeguards are taken:

- Handbrakes are firmly applied on all locomotives and 1 in 4 wagons.
- The locomotive reverser handle is to be removed and kept in a pre-arranged location; the locomotive cab doors must be locked.
- The unit freight train must only be issued with a track warrant to the loop where stabling; the limits of this track warrant being cleared once the train is in clear on the loop. A further track warrant to be issued when the train is ready to proceed.
- The Arrival signal may indicate that the associated main line points are set for the loop. In this situation any opposing train must stop at the Arrival signal and reset the points for the main line.

TO01 Train Movements, 10. Securing Motive Power Units and **TO08 Shunting, 7.3 Standing at Stations** are modified accordingly.

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9.3 Certified Mechanical Personnel Working on the SNL

To provide protection for Rolling Stock Representatives working on vehicles standing on crossing loops between Red Jacks and Sergeants Hill inclusive, the following will apply.

- The Train Controller will authorise a **TS09 Foul Time** occupation.
- The Rolling Stock Representative will complete a Mis.71 with the details of the occupation as provided by the Train Controller.
- The Train Controller will provide ‘blocking in TWACS’ to protect the main line against the passage of any rail vehicle.
- The provisions of **TS09 Foul Time, 6.1 Safety Buffer and RP09 Using Foul Time** will apply.
- When work is complete, the Rolling Stock Representative will release their **TS09 Foul Time** to the Train Controller and complete the Mis.71 accordingly.
- **TS09 Foul Time** activities permitted applies.

NOTE
The provisions of **TO07 Working on Rail Vehicles, 5.3 Protection of Motive Power Unit and Personnel Performing Maintenance** apply for personnel performing maintenance on Motive Power Units

9.4 Ikamatua

High column switch stand, Green / Red Target type is locked with a TW lock and AS padlock. **Network Signals, Indicators and Boards Manual, 7.5 High Column Switch Stands** is modified accordingly.

9.5 Tawhai Bank

NOTE
The following procedures are for train handling purposes only.

9.5.1 When Stopped on a 1-in- 50 Uphill Gradient

1. Advise the Train Controller of the circumstances.
2. Stop the train with a minimum brake pipe reduction (70 kPa).
3. At the point of stopping apply the independent brake fully on the locomotives.
4. If able to restart train again, advance throttle to notch 2, release train brake, advance throttle to notch 4 to hold train while a recharge of train brakes is obtained. Slowly release the independent brake and advance throttle to notch 5 to start the train.
5. If not able to start the train again, then the setting back procedures for a 1 in 50 gradient will apply.

9.5.2 When Setting Back Down a 1-in-50 Gradient

When Dynamic Brake is Operational

The Train Brakes may only be released with the train stopped.

1. Advise the Train Controller of the circumstances.

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2. Stop the train with a minimum brake pipe reduction (70 kPa).
3. At the point of stopping apply independent brake fully on the locomotives.
4. Increase the Brake Pipe reduction to 80 kPa.
5. Set the isolation switch on any defective locomotive to ‘isolate’.
6. Place the reverser to reverse and select Dynamic Brake.
7. Move the Dynamic Brake handle around to full amps position.
8. Wait 50 seconds.
9. Slowly release the independent brake – the train should begin to set back.
10. Regulate the Dynamic Brake to hold the train speed at a maximum of 15 km/h. Dynamic Brake handle position 5 to 6 is all that should be required to balance the speed with the brake pipe reduction once the train has settled.
11. If Train speed exceeds 15 km/h with full Dynamic Brake effort, then increase the brake pipe reduction to regulate the speed as circumstances require.

The Train brakes may only be released with the train stopped.

Procedure:

1. Stop the train.
2. Place the reverser to forward.
3. Release the train brakes and advance the throttle to notch 4 (this will hold the train until the brake pipe is fully recharged when another reduction of the train brakes can be made again to continue with the setting back of the train).

When Dynamic Brake is NOT operational

Advise the Train Controller of the circumstances.

1. Stop the train with a minimum brake pipe reduction (70 kPa).
2. At the point of stopping apply the independent brake on the locomotives fully.
3. Increase the brake pipe reduction to 80 kPa.
4. Set the isolation switch on any defective locomotive to ‘isolate’.
5. Place the reverser handle to reverse.
6. Slowly release the independent brake on the locomotive until the train starts to set back.
7. Once the train starts setting back use the independent brake on the locomotive to control the train speed at a maximum of 10 km/h by maintaining brake cylinder pressure at 80 to 100 kPa.
8. If train speed exceeds 10 km/h with a maximum of 100 kPa brake cylinder pressure on the locomotive, increase the brake pipe reduction on the train brake to regulate the speed as circumstances require.

9.5.3 Burst Hose Procedure

1. Advise the Train Controller.
2. Apply power and sand until the train pulls to a stop. This conditions the rail for maximum adhesion.
3. Apply the locomotive independent brakes fully. Proceed back along train applying handbrakes on the first 5 wagons.
4. At the point of the burst hose mark the point.
5. Return to the front of the locomotive, hold the brake pipe hose firmly and fully open the brake pipe cock.
6. Leave the brake pipe cock open.
7. In the cab of the lead locomotive, place the Automatic Brake Valve Cut Out to Cut Out position.
8. Proceed back to the burst hose and replace it.
9. Re-couple the brake pipe hoses on the wagon and open the air cocks.
10. Continue to the rear of the train checking for any derailment. If the rear of the train is inaccessible, advise the Train Controller.

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11. Return to the front of the locomotive and close the brake pipe cock fully.
12. In the cab of the lead locomotive place the Brake Valve Cut Out to the Cut In position.
13. The train brakes will now recharge and once fully recharged make a brake pipe reduction of 100 kPa.
14. Proceed back along the train releasing handbrakes on the wagons.
15. Return to locomotive cab, release train brakes and continue journey.

9.5.4 Vigilance System Reset Procedure

Advise the Train Controller of the circumstances.

1. Move Automatic Brake Valve handle to handle off position.
2. Wait 50 seconds and operate the vigilance penalty brake reset switch.
3. Once reset, move the Automatic Brake Valve handle to release and recharge the air brake system.
    a. **On an upgrade**, if required begin throttling up to notch 4 to hold the train while a full recharge is obtained. Ensure that the PCS light goes out before advancing the throttle.
    b. **On a down grade**, if required, set up for full Dynamic Brake prior to resetting the vigilance penalty brake reset switch. Ensure the PCS light goes out before selecting dynamic brake.

9.6 Reefton

9.6.1 No.9 and 11 Points Lock

Nos. 9 and 11 switch stand points are fitted with electric locks which are controlled from a pushbutton control box near the points.

To unlock the points:

1. Ensure a track warrant has been issued.
2. Open the points control box door and press the ‘Free’ pushbutton.
3. When the ‘Free’ light illuminates the points are unlocked and available for shunting.
4. The control box door should be left open until shunting has been completed.

To lock the points to allow train movements through the main line:

1. Ensure that 9 and 11 switch stand points have been returned to the main line or ‘trap’ position.
2. Check that the ‘normal’ light inside the points control box is lit.
3. Shut the control box door.
4. The track warrant may then be cancelled if the main line is clear.

CAUTION

Take particular care when operating these hand points to operate both ends as they are individual points and not interlocked.

NOTE

If the Arrival signal has been passed at Stop with the A light illuminated the movement must be able to stop short of these points as they may be in reverse.

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9.6.2 Limits of a Track Warrant

Referring to **SO08 Track Warrant Control, 7.1 Authority of a Track Warrant** – Commencement of Authority at a warrant station, when departing from the loop for north, No. 3 points must be used as the departing route (No.11 points not to be used).

The exception being when a 'work between' track warrant is issued, which includes the main line at Reefton.

9.6.3 UHF Portable Radio to assist ATC Trains

A locomotive UHF portable radio is at Reefton for use by personnel who assist Locomotive Engineers on ATC trains when they are stopped and with parts of the train or locomotive on both sides of the Tawhai tunnel.

When this occurs the Locomotive Engineer should request that the person who is going to assist takes the UHF portable in addition to the normal equipment.

Use channel 3 of the UHF portable for communication between the Locomotive Engineer and the person assisting as follows:

1. The Locomotive Engineer asks the Train Controller for permission to activate the crossband link to talk to the person assisting.
2. When the Train Controller gives permission, the Locomotive Engineer removes the portable and gives a test call to the Train Controller on channel 4 in the usual manner.
3. The Locomotive Engineer advises the Train Controller from the portable that the channel is being changed to 3 to communicate with the person assisting.
4. Communication may then take place between the Locomotive Engineer and the person assisting, portable to portable on channel 3.

NOTE
The Train Controller will not hear their conversation. To talk to the Train Controller, use channel 4.

NOTE
The alert alarm will reset to 7 minutes each time either portable is used to transmit.

NOTE
The Train Controller must confirm with both the Locomotive Engineer and the person assisting about when they will call the Train Controller while the two UHF portable radios are in use. The portable radio at Reefton must be kept in the charger when not in use. If in use for more than eight hours the battery will require recharging.

9.7 Buller Gorge – Train Safety Procedures

Purpose

The instruction outlines the safety procedures that are to take place in the event of an accident / incident occurring to a train in the area between Westport and Inangahua.

Geography

Between Westport and Inangahua the railway line traverses remote territory which includes the Buller Gorge and which for the greater part of the route is not accessible by road. In the event of it being necessary to provide assistance to a train, special resources may be required for transport or emergency purposes.

9.7.1 Weather Conditions

In the event of inclement weather conditions prevailing, the Locomotive Engineer will advise the Train Controller who will inform the Network Control Manager, who in turn will decide on the appropriate action, including a track inspection if necessary.

Rainfall gauges at White Cliffs (98 km), Dee Point (113.95 km) Tiroroa (116.3 km) and Cascade (120.8 km) measure rainfall in the Buller Gorge and will activate an alarm in Train Control when rain levels indicate a high risk of slips.

9.7.2 Rainfall Alarm when Trains are not in the Buller Gorge

When an alarm activates at one or more of the rain gauge sites, the following action must be taken (noting the mms described are over a 24-hour period)

Rainfall	Action Taken
50 mm	• Warning ‘alert only’ to Track Maintenance Representative.
60 mm	• Train Controller stops trains from entering. • Notify Track Maintenance Representative inspection required. • All services to remain outside Buller Gorge until inspection completed.
70 mm	• Train Controller stops trains from entering. • Inspection required before trains enter, inspection undertaken at Track Maintenance Representative discretion when conditions are safe to do so.

9.7.3 Rainfall Alarm when Trains are in the Buller Gorge

If there is a service in the Buller Gorge when a rainfall alarm activates, Train Control is to advise services as follows:

Rainfall	Action Taken
50 mm	• Warning ‘alert only’ to Track Maintenance Representative.
60 mm	• Reduce speed to Restricted Speed. • Continue to destination. • Train Controller stops any further trains from entering. • Notify Track Maintenance Representative inspection required. • All services to remain outside Buller Gorge until inspection completed.
70 mm	• Reduces to a speed the Locomotive Engineer deems safe, not to exceed Restricted speed, to continue to destination, noting that a track inspection may take priority. • Train Controller stops any further trains from entering. • Inspection required before trains enter, inspection undertaken at Track Maintenance Representative discretion when conditions are safe to do so.

9.7.4 Re-opening the Buller Gorge to Trains

After the Track Maintenance Representative has completed their inspection, they will advise the Train Controller whether it is safe to allow trains to continue running / run again.

The decision to reopen the Buller Gorge sits with the inspecting Track Maintenance Representative only and is based on the conditions observed in the Buller Gorge and the weather conditions at the time of the inspection.

The Track Maintenance Representative will consider the following:

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- Were there physical obstructions preventing train movements?
- Were culverts and bridges performing as required?
- What is the weather doing? Is it raining heavily? Is the rain easing? Has the rain stopped?
- What does the weather forecast indicate?
- What about wind?

If the conditions are not suitable to resume train running, a further inspection may be required after the weather has eased further.

Resetting the Alarm

As the data is cumulative, the alarm will only ‘reset’ over time as the rainfall stops, and the cumulative total reduces.

9.7.5 Communications within the Buller Gorge

All trains must carry a satellite phone and VHF portable radio (Midland backup) when travelling through the Buller Gorge.

Satellite phones are provided at:

- Westport
- Reefton
- Greymouth

CAUTION

Satellite phones must not be used by rail personnel operating a moving rail vehicle.

9.7.6 Compulsory Radio Call Locations

It is recognised that it is beneficial that the location of trains in the Buller Gorge be accurately defined as an aid to pin-pointing the area to which assistance be directed should it be required when continuous communication is not available, or the crew are incapacitated.

To facilitate this, notice boards denoting ‘Compulsory Call Location’ have been erected in the Buller Gorge at the following locations:

- Te Kuha (at 126.09 km)
- Cascade (at 120.50 km)
- Tiroroa (at 115.81 km)
- Berlins (at 106.00 km)
- Mackley (at 99.60 km)
- Buller (at 93.50 km)

At each compulsory call location, the Locomotive Engineer of all trains must Base Call the Train Controller in accordance with radio instructions in the **Radio Systems Operations Manual**.

The locations of the Compulsory Call notice boards are shown on the train control diagram.

The Train Controller upon receiving a radio call from such locations will acknowledge the call as soon as possible and MUST record the progress of the train with the time called on the train control diagram.

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Should a locomotive radio base call to the Train Controller not ‘lock on’ (green light continues to flash) within the usual time frame the Locomotive Engineer is to voice call prior to reaching the next Compulsory Call Location.

If no reply is received from the Train Controller, and a ‘lock on’ has not occurred, it should be presumed that a failure has occurred. Provided that the Locomotive Engineer has the appropriate Track Warrant, the train may proceed to this compulsory call location where the train is to be stopped while the satellite phone is used to make a call to the Train Controller.

If the Train Controller does not hear from the train at the expected times, arrangements should be made to find out why the train has been delayed.

9.7.7 Train Control Radio System Failure

When there is a failure of the radio system, the radio link or radio computer system; and when conditions meet those described in Instruction 5.23, personnel may not enter the Buller Gorge, unless they are carrying out repairs to the radio system.

Safe working procedures must be applied when carrying out repairs to the radio system.

In the event of a radio failure while a train is in the Buller Gorge, satellite telephones are provided as an emergency backup.

When the Train Control radio system has failed, and it is necessary for a Locomotive Engineer to make a satellite phone call:

- Stop the train with the locomotive clear of tunnels and bridges.
- Remove the phone from the carry case.
- Turn the phone on, extend aerial and place call.

9.7.8 Emergency Communications in the Buller Gorge

The case of an emergency, personnel who assist Locomotive Engineers will use channel 1.

If channel 1 is not sufficiently clear, communicate via a Train Control channel.

9.7.9 Hi-Rail Vehicle at Westport

During the hours that the Track Maintenance Representative are on duty, access to the Hi-Rail vehicle can be obtained by telephoning:

- Westport Track Maintenance Representative
- Train Control (telephone 43367), which is in Selcall radio contact with the vehicle.

Operations Support maintains a call-out register for after-hours contacts.

9.7.10 Additional Rescue Support Services

In an emergency, the assistance of the Police and other emergency services is to be sought as normal practise. Police have the resources of the Search and Rescue Squad who can access additional personnel and ancillary transport.

9.7.11 First Aid Skills

All rail personnel available for emergency callouts are trained and certified in First Aid procedures by a recognised training authority.

9.8 Slip Alarm Twin Bridges - Tiroroa

A slip detection array is located at 112.50 km between Twin Bridges and Tiroroa at an existing slip.

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The array consists of four tilt sensors which are activated when movement is detected and a sensor tilts beyond a pre-defined angle. The site also has a camera which will take a series of photos during the day and an infrared photo of the slip at night if movement is detected.

When movement is detected, the sensors will:

- send an alarm to the Train Control signalling screen, and
- send an email to Operations Support and the Network Control Manager.

The Train Controller upon receiving activation of the slip warning system must:

- advise Operators of the slip alarm activation, and stop any train clear of the slip alarm area.
- advise Operations Support to arrange infrastructure personnel to undertake an inspection.
- Infrastructure personnel will advise the Train Controller if it is suitable to run trains through the slip alarm area, and if a temporary speed restriction is required.
- If a temporary speed restriction is required, the Train Controller will enter details in the Access Provider's Speed Restriction system and advise any trains that are already running.
- Upon receiving clearance from infrastructure personnel to run trains, the Train Controller must not allow any trains to traverse the slip until the slip warning system has been reset, or infrastructure personnel are at the 112.50 km to pilot the train over the slip.
- Operations Support will work with Harvest to reset the alarm and advise the Train Controller when the reset is complete.'

9.9 Slip Alarm Berlins IB – Tiroroa

A slip sensor is located at 113.959km between Berlins IB and Tiroroa at an existing slip.

The array consists of tilt sensors which are activated when movement is detected and a sensor tilts beyond a pre-defined angle which then:

- sends an alarm to the Train Control signalling screen, and
- sends an email to Operations Support and the Network Control Manager.

The Train Controller upon receiving activation of the slip warning system must:

- advise Operators of the slip alarm activation, and stop any train clear of the slip alarm area.
- advise Operations Support to arrange infrastructure personnel to undertake an inspection.
- Infrastructure personnel will advise the Train Controller if it is suitable to run trains through the slip alarm area, and if a temporary speed restriction is required.
- If a temporary speed restriction is required, the Train Controller will enter details in the Access Provider's Speed Restriction system and advise any trains that are already running.
- Upon receiving clearance from infrastructure personnel to run trains, the Train Controller must not allow any trains to traverse the slip until the slip warning system has been reset, or infrastructure personnel are at the SNL 113.959km to pilot the train over the slip.
- Operations Support will work with Harvest to reset the alarm and advise the Train Controller when the reset is complete.

9.10 Slip Alarm Tiroroa – Cascade IB

A slip sensor is located at 119.76 km between Tiroroa and Cascade IB at an existing slip.

A draw wire has been installed that activates when debris fills up mesh and causes extension of the draw wire beyond a pre-defined limit. Currently the system does not have a camera due to the limited satellite coverage.

When movement is detected, the sensors will:

- send an alarm to the Train Control signalling screen, and

- send an email to Operations Support and the Network Control Manager.

The Train Controller upon receiving activation of the slip warning system must:

- advise Operators of the slip alarm activation, and stop any train clear of the slip alarm area.
- advise Operations Support to arrange Infrastructure personnel to undertake an inspection.
- Infrastructure personnel will advise the Train Controller if it is suitable to run trains through the slip alarm area, and if a temporary speed restriction is required.
- If a temporary speed restriction is required, the Train Controller will enter details in the Access Provider's Speed Restriction system and advise any trains that are already running.
- Upon receiving clearance from infrastructure personnel to run trains, the Train Controller must not allow any trains to traverse the slip until the slip warning system has been reset, or infrastructure personnel are at the SNL 119.76 km to pilot the train over the slip.
- Operations Support will work with Harvest to reset the alarm and advise the Train Controller when the reset is complete.

9.11 Slip Alarm Cascade IB – Te Kuha IB

A slip sensor is located at 121.330 km between Cascade IB and Te Kuha IB at an existing slip.

The monitoring consists of a single draw string monitor at the base of the outcrop within the catch ditch. If a failure occurs with the potential to impact rail, the draw wire will extend beyond the pre-defined string length. The site also has a camera which will take a series of photos during the day and an infrared photo of the slope at night.

When movement is detected, the sensors will:

- send an alarm to the Train Control signalling screen, and
- send an email to Operations Support and the Network Control Manager.

The Train Controller upon receiving activation of the slope warning system will:

- advise Operators of the slip alarm activation, and stop any train clear of the slope alarm area.
- advise Operations Support to arrange infrastructure personnel to undertake an inspection.
- Infrastructure personnel will advise the Train Controller if it is suitable to run train through the slip alarm area, and if a further temporary speed restriction is required.
- If a temporary speed restriction is required, the Train Controller will enter details in the Access Provider's Speed Restriction system and advise any trains that are already running.
- Upon receiving clearance from infrastructure personnel to run trains, the Train Controller must not allow any trains to traverse the slip until the slip warning system has been reset, or infrastructure personnel are at SNL 121.330 km to pilot the train past the slip.
- Operations Support will work with Harvest to reset the alarm and advise the Train Controller when the reset is complete.

9.12 Westport

Track warrants authorising entry to Westport loop will also contain a clause 10 'Call Train Control at No.1 points, Westport' (or No.9 depending on the limits of the warrant).

- This is to ensure that the addressee calls the Train Controller to obtain authority before unlocking the main line points at Westport.
- The lines leading off the main line to the points where they converge (adjacent to Queen Street) together with the portion of the line from these points to the All Trains Stop board will be known as the crossing loop for Track Warrant Control purposes and only one movement can take place in the crossing loop at the one time; in addition, wagons are not to be stored in the crossing loop area. The fouling points on the triangle have been marked with white paint. The area beyond the 'All Trains Stop' board will be Westport station yard.

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- No outbound train may pass the shunting limit board unless authorised by the Train Controller. No incoming train may pass the All Trains Stop board unless authorised by the OIC. If Westport is unattended then the Locomotive Engineer must obtain permission from the Train Controller who in turn must have had prior authority form the OIC before the station was left unattended.
- The hand points on the running road leading to the main line must remain locked when not in use.
- The speed of all trains between Westport Station and the main line triangle must not exceed 25 km/h.

Berthing Instructions

When trains are required to berth in Westport station yard / loop the following procedures will also be necessary to allow trains to proceed into Westport without stopping at the main line points:

- The Train Examiner Operations, Westport must ascertain from the Train Controller, particulars of all intended train movements so the points can be correctly set in advance of the train's arrival / departure.
- Once the Train Controller's permission has been obtained, the Train Examiner Operations may unlock and reverse these points for train movements. To unlock the main line points, they will use the station TW key (No.73) together with the key to unlock the special padlock.
- Once the train has cleared the reversed main line points, the Train Examiner Operations operating the points must advise the Locomotive Engineer when the points have been returned to normal, locked and the TW key is again in the possession of the Train Examiner Operations. The Locomotive Engineer must not clear the limits of the track warrant until this assurance has been obtained.

EXCEPTION: When the Train Examiner Operations is to be absent from the station, or the station is being left unattended for several hours between shifts and it is necessary to open the main line points in advance of the train's due arrival time, this may be permitted once the Train Controller's permission has been received. The points will be reversed with the TW key impounded in the lock and locked with the special padlock in the pin provided before leaving the points unattended. Once over the points, the train will continue into Westport and the Locomotive Engineer will return by motor vehicle to lock the main line points in normal before clearing the limits and cancelling the track warrant.

NOTE
When relocking the points, the Locomotive Engineer will need to obtain the key from the station to unlock the special padlock; then return this and the TW key to the station.

SO08 Track Warrant Control, 10.3 Hand Points is modified accordingly.

- When movements are arriving / departing or moving on the main line at Westport, they must be prepared to stop at the main line points as they may not be set for the intended movement.
- Through trains arriving at Westport from Ngakawau, which are to berth on the main line for a crossing for a train from south, must stop short of Derby Street level crossing so as not to delay road traffic unnecessarily.
- The use of the station TW key to unlock main line points applies only at Westport. This key is to be used by authorised Train Examiner Operations Personnel only.

9.13 Sergeants Hill – Vehicles unattended on Loop

Trains may be left unattended in the crossing loop at Sergeants Hill as required by the Terminal Supervisor, Westport.

When trains / tonnage is left unattended on the loop at Sergeants Hill, the Train Controller must make a suitable endorsement on the train control diagram to indicate the presence of tonnage on the loop.

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To guard against movements running away and fouling the main line turnouts, derailers have been fitted on the loop at both ends.

The derailers must be locked across the rail once trains/tonnage are left on the loop.

These trains must only be issued with a track warrant to the loop at Sergeants Hill the limits of this track warrant being cleared once the train is in clear on the crossing loop and the main line points locked in normal.

A further track warrant to be issued for the next portion of the journey when the train is ready to proceed.

The Locomotive Engineer of the train to be left on the loop must apply a full air brake service application and ensure sufficient handbrakes are applied to secure the train on the crossing loop. The locomotive reverser handle is to be removed and kept in pre-arranged location; the locomotive cab doors must be locked.

TO01 Train Movements, 10. Securing Motive Power Units and **TO08 Shunting, 7.3 Standing at Stations** are modified accordingly.

NOTE
When the Westport end main line points are set in reverse, the Locomotive Engineer will lock the lever with the AS padlock and TW key impounded. The points must be restored and locked for the main line as soon as possible after being used.

9.14 Ngakawau

9.14.1 CIMW Site

A coupled in motion weighbridge is installed at 140.70 km SNL.

Fault conditions are alerted to the Train Controller and broadcast locally by radio on Channel 1.

Locomotive Engineers hearing a warning message must:

- Obey any message instructions to reduce speed or stop, and
- Must immediately contact the Train Controller for further instructions.

9.14.2 All Trains Stop Board

There is an ATS board 50 metres south of the TW notice boards at Ngakawau.

No Down train may pass this board until authorised by the Shunter in Charge.

The speed of all movements within Ngakawau station limits must not exceed 10 km/h.

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10. Signalling and Interlocking Instructions

10.1 Midland Line

Darfield

The current S&I Diagram is No.3349.

Amendments:

- 1952B and 1973A loop to siding points have been removed and replaced with straight rail.

Staircase–Springfield

Current S&I Diagram No.2866.

Amendments:

- Move 6668 Intermediate signal from RH side to LH side of track.

Cora Lynn–Craigieburn

Current S&I Diagram No.2879.

Otira–Arthur's Pass

Current S&I Diagram No.3254.

Rotomanu–Aickens

Current S&I Diagram No.2880.

Kokiri–Moana

Current S&I Diagram No.3280.

Stillwater

Current S&I Diagram No.3218.

Greymouth

Current S&I Diagram No.3118.

Amendments:

- Insert crank handle symbol below No.7 points Omoto.

10.2 Stillwater – Ngakawau Line

Red Jacks

Current S&I Diagram No.2896.

Ikamatua–Totara Flat

The current S&I Diagram is No.3384.

Amendments:

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- Reference to the next S&I heading to Westport should be 'See S&I Diagram for Mawheraiti"

Mawheraiti

Current S&I Diagram No.2823.

Reefton–Tawhai

Current S&I Diagram No.3405.

Inangahua–Cronadun

Current S&I Diagram No.2895.

Amendments:

- Insert TWC hand points boards at No.1 and No.9 points Cronadun.
- Move Buller IB 93.50 to below the line.

Westport–Tiroroa

Current S&I Diagram No.3242.

Ngakawau–Sergeants Hill

Current S&I Diagram No.3019.

10.3 Hokitika Line

Current S&I Diagram No.3224.

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11. Signalling and Interlocking Out of Use

Points at the following stations or sidings are bolted in normal and secured with a PS padlock pending removal.

If it is necessary to shunt the siding stated below, both the Signals and Track & Structures Personnel for the area must be in attendance.

Unless otherwise stated the permission of Train Control must be obtained and, if in a Track Warrant area, a Track Warrant must be issued before the points are unlocked.

The Officer from whom permission to unlock the points was obtained must be advised when the points are again padlocked.

Stillwater

The pushbutton box for 8R signal adjacent to No.9 points is out of use pending repairs. The push button on the platform is still available.

No.1 & No.11 main to gantry siding points have been locked in normal. Sidings 8, 10, 11 and the Gantry Siding are closed to all traffic.

Ikamatua

The loop to siding points (both ends) have been secured in normal, pending repairs.

Cronadun

The siding is closed to all traffic pending removal, loop to siding points have been clamped in normal.

Kumara

The siding is closed to all traffic; No.1 points have been secured in normal and are not available for use.

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