

Maintain Track Circuits

Issue date: 15/11/10

Review date: 21/10/13

SWMS number: SMS-06-SW-0753	SWMS Name: Maintain Track Circuits			SWMS Team: Garry Leamey Michael Douglas Michael Robinson David Read David Colusso Tony Heuston
Custodian (Position): Manager Signals Maintenance Jim Zeaiter	Assumptions: For Maintenance and corrective activities Mandatory PPE must be worn. Includes Impedance Bonds			Content reviewed by Technical expert (SME) and RailCorp safety professional (position including Div/Group) Snr Signal Engineer West Safety Facilitator, Safety Support Services Division
Approver (Position): General Manager Infrastructure Maintenance	Plant/Equipment/Tools: <ul style="list-style-type: none"> • Multimeter • Insulation Tester • Current meter • Shunt box • JS Integrator • Clancy Meter • AF Selective frequency meter • Hand Tools • Arrestor Tester 	Records/Reporting: <ul style="list-style-type: none"> • Teams 3 • Track Circuit History Card 	Permits/licences required: Railcorp Licensed Signal Electrician and Signal Mechanical personnel as listed in TMG A1415	PPE required: <ul style="list-style-type: none"> • Gloves as required
Applicable Standards, Codes of Practice and guidance: <ul style="list-style-type: none"> • Code of Practice for Prevention of Occupational Overuse Syndrome 1996 • Code of Practice for Manual Handling 2005 • Code of Practice for Risk Assessment 2001 • Code of Practice for Storage & Handling of Dangerous Goods 2005 • Induction for Construction Work: National Code of Practice • Manual J 	Inspection requirements <ul style="list-style-type: none"> • Testers and meters have current calibration tag • Visual inspection of hand tools before use 	Service schedule: See attached Service Schedule listing	Training/Qualifications required: Signal Electrician, and Signal Mechanical RISI WorkCover General Induction	

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Number	Step	Hazard or human error (Safety/Environmental hazards identified, including physical environment, human errors, plant and equipment)	Risk ranking before controls	Control (to be Implemented to eliminate or reduce the risk to the lowest practicable level)	Risk ranking after controls	Responsibility	Job step to be completed in accordance with (name associated documentation)
1	Advise Signal Box	Miscommunication	B+	Use correct communication protocols	C-	Worksite Protection Officer, Pre work briefer	Network Rules
2	Worksite Assessment	Struck by Train	B+	Suitable Worksite Protection	C+	Worksite Protection Officer	Network Rules
		Slip, Trip, Fall	C+	Inspection of Site	C-	Pre work briefer, Workgroup members	
		Needle stick injury	C+	SWI for handling sharps	C-	Pre work briefer, Workgroup members	SMS-06-SW-0405
		Environmental Factors	C+	Implement EMS Environmental procedures	C-	Pre work briefer, Workgroup members	Refer to applicable EMS guidelines
3	Access Worksite	As for Step 2		As for Step 2		Pre work briefer, Workgroup members	
		Bites, Stings by Wasps / Spiders / Vermin	C-	Check for signs when opening & arrange removal when found. First Aid	D	Pre work briefer, Workgroup members	
		Manual Handling	C+	Correct Manual handling Techniques, Team lift	C-	Pre work briefer, Workgroup members	
4	Maintain, Test & Certify Equipment	Skin / Eye irritation from Substances, Lubricants or vapours	C+	Controls as per MSDS	D	Pre work briefer, Workgroup members	MSDS Information
		Manual Handling	C+	Correct Manual handling Techniques, Team lift	C-	Pre work briefer, Workgroup members	
		Sudden release of energy when tools slip	C-	Instruction to new starters on correct techniques	D	Pre work briefer, Workgroup members	
		Contact with Electricity (low voltage)	B-	Awareness of sources of Electricity	C+	Pre work briefer, Workgroup members	
		Bites, Stings by Wasps / Spiders / Vermin	C-	Check for signs when opening & arrange removal when found. First Aid	D	Pre work briefer, Workgroup members	
5	Clean up worksite	Poor Housekeeping	D	Inspect and clean site	D	Pre work briefer, Workgroup members	
		Manual Handling	C+	Correct Manual handling Techniques, Team lift	C-	Pre work briefer, Workgroup members	
		Waste Disposal	C-	Use correct SMS Disposal Procedure	D	Pre work briefer, Workgroup members	
6	Egress Worksite	As for step 3		As for step 3		Pre work briefer, Workgroup members	

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7	Advise Signal Box at Completion of activities	Miscommunication	B+	Use correct communication protocols	C-	Worksite Protection Officer, Pre work briefer	Network Rules

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NOTE: Each work group or team member must sign off on the SWMS to acknowledge they have been briefed about or instructed in the SWMS

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JSSR	JSDR	ACSR	ACDR ELECT	ACSR WBS	ACDR WBS	CSEE	FS2500	ML
SC 07 42 01 00 SS-01	SC 07 42 02 00 SS-01	SC 07 43 01 00 SS-01	SC 07 43 02 00 SS-01	SC 07 43 03 00 SS-01	SC 07 43 04 00 SS-01	SC 07 44 01 00 SS-01	SC 07 44 02 00 SS-01	SC 07 44 03 00 SS-01
SC 07 42 01 00 SS-02	SC 07 42 02 00 SS-02	SC 07 43 01 00 SS-02	SC 07 43 02 00 SS-02	SC 07 43 03 00 SS-02	SC 07 43 04 00 SS-02	SC 07 44 01 00 SS-02	SC 07 44 02 00 SS-02	SC 07 44 03 00 SS-01E
SC 07 42 01 00 SS-03	SC 07 42 02 00 SS-03	SC 07 43 01 00 SS-03	SC 07 43 02 00 SS-03	SC 07 43 03 00 SS-03	SC 07 43 04 00 SS-03	SC 07 44 01 00 SS-03	SC 07 44 02 00 SS-03	SC 07 44 03 00 SS-02
SC 07 42 01 00 SS-04	SC 07 42 02 00 SS-04	SC 07 43 01 00 SS-04	SC 07 43 02 00 SS-04	SC 07 43 03 00 SS-04	SC 07 43 04 00 SS-04	SC 07 44 01 00 SS-04	SC 07 44 02 00 SS-04	SC 07 44 03 00 SS-03
		SC 07 43 01 00 SS-05	SC 07 43 02 00 SS-05	SC 07 43 03 00 SS-05	SC 07 43 04 00 SS-05	SC 07 44 01 00 SS-05		SC 07 44 03 00 SS-03E
			SC 07 43 02 00 SS-06		SC 07 43 04 00 SS-06	SC 07 44 01 00 SS-06		

FS2600	DC Rectified	DC Non Rectified	GCP	Treadles				
Interim	SC 07 41 00 00 SS-01	SC 07 41 00 00 SS-01	SC 07 48 20 00 SS-01	SC 07 46 01 00 SS 01				
Schedules	SC 07 41 00 00 SS-02	SC 07 41 00 00 SS-02	SC 07 48 20 00 SS-02	SC 07 46 01 00 SS 02				
only	SC 07 41 00 00 SS-03	SC 07 41 00 00 SS-03	SC 07 48 20 00 SS-03	SC 07 46 01 00 SS 03				
	SC 07 41 00 00 SS-04	SC 07 41 00 00 SS-04	SC 07 48 20 00 SS-04	SC 07 46 01 00 SS 04				
	SC 07 41 00 00 SS-05	SC 07 41 00 00 SS-05						

Legend

JSSR:	Jeumont single rail	DC Rectified : DC Rectified track circuit
JSR:	Jeumont double rail	DC Non Rectified : DC track circuit Battery Feed
ACSR	AC single rail	GCP : Grade Crossing Predictor(Safe Tran/Westinghouse Signals)
ACDR Elect	AC double rail (DC electrified areas)	Treadle: CSEE D50
ACSR WBS	Westinghouse AC single rail	
ACDR WBS	Westinghouse AC double rail	
CSEE	CSEE audio	
FS2500	Westinghouse audio	
ML	ML audio	
FS2600	Interim schedules (Strathfield District only)	

RailCorp Level 2 Risk Matrix - Regional & Local (Workplace)		Likelihood/Frequency							Definition for Use - Regional & Local level (Workplace) Used for workplace hazards and safety risks that do not consider the whole of the network. Indicatively this matrix is appropriate for use where the hazards under consideration are up to 10% of the total network exposure. This includes regional and local workplace risk assessments. As an example, the Level 2 scale would be used when examining the risk of slips, trips and falls on specific RailCorp platforms within a region or at a particular station, or the risk of fire within a depot. There are 3 options for descriptors which can be used to determine the frequency category. One set of descriptors is provided for frequency, one for historical likelihood, and one for predictive likelihood in the workplace. Choose the most appropriate. To score the risk, follow the steps: 1. Identify the magnitude of the credible consequence if the risk were to occur. If applicable, risks should be considered in terms of the safety (this matrix), commercial and environmental impact (using other matrices). 2. Identify the likelihood of this level of consequence occurring. (This is done after considering the effectiveness of the current controls in place) 3. Score the risk using the combination of likelihood and consequence ranking. Note: Where there are a range of credible consequences which may lead to a different level of risks and/or where the controls may be different. It may be useful to score the risk more than once.
		Event Frequency	Less than once every 1000 years	Once every 100 to 1,000 years	Once every 10 to 100 years	Once every 1 to 10 years	More than once per year up to and including 10 times per year	More than 10 times per year	
		Historical (Likelihood)	Unheard of in the rail industry	Has occurred once or twice in the rail industry	Has occurred many times in the rail industry, but not in NSW	Has occurred once or twice in NSW	Has occurred frequently in NSW	Has occurred frequently at specific locations	
		Workplace Predictive (Likelihood)	Not expected to occur	May occur only in exceptional circumstances	Could occur at some time but not likely	You would expect it to occur at least once in the next 10 years performing similar activities	You would expect it to occur at least once this year performing similar activities	You would expect it to occur at least once this month performing similar activities	
			F1	F2	F3	F4	F5	F6	
Consequence			Incredible	Improbable	Remote	Occasional	Probable	Frequent	
>10 Fatalities	C6	Disastrous	B-	B+	A	A	A	A	
2-10 Fatalities	C5	Catastrophic	C+	B-	B+	A	A	A	
1 Fatality (2-10 Major Injuries)	C4	Critical	C-	C+	B-	B+	A	A	
1 Major Injury	C3	Major	D	C-	C+	B-	B+	A	
1 or more Minor Injuries	C2	Minor	D	D	C-	C+	B-	B+	
First aid treatment, or illness/injury not requiring treatment	C1	Negligible	D	D	D	C-	C+	B-	