

Bridge Retraining Works

Issue date: 12/10/10


Review date: 14/09/13

SWMS number: SMS-06-SW-0957	SWMS Name: Bridge Retraining Works			SWMS Team: Civil Construction Review Team
Custodian (Position): Services Manager Civil	Assumptions: Site Specific Risks Are Addressed And Assessed In Pre-Work Briefing			Content reviewed by Technical expert (SME) and RailCorp safety professional (position including Div/Group) Services Manager Civil and Safety facilitator, Safety Support Services Division.
Approver (Position): Civil Electrical Works Manager Infrastructure Renewals	Plant/Equipment/Tools: <ul style="list-style-type: none"> Backhoes, Dumpers, Hi-Rail Trucks, Elevated Work Platforms, Scissor Lift Signs, Barricades Hydraulic Equipment, Oxy – Acetylene Equipment Scaffolding Water Cart, Fire Extinguisher Pigs Foot, Sledge Hammer, Clip Pullers, Electrical Power Tools, Hand Tools Transoms, New Plates & Rail 	Records/Reporting: <ul style="list-style-type: none"> Worksite Protection Plan Pre-work Brief Site Specific Management Plan Daily Plant Checklist Electrical Test Tags Hot Work Permit (During Total Fire Ban) Fire Brigade Electrical Permits 	Permits/licences required: <ul style="list-style-type: none"> Backhoe / Dumpers / Hi-Rail Truck / Elevated Work Platforms / Scissor Lift Operator Certificates Electrical Permit Holder 	PPE required: <ul style="list-style-type: none"> Safety Boots High Visibility Vests Hardhats Protective Clothing Safety Glasses / Face Shields <p>And as specified below.</p> <ul style="list-style-type: none"> Fall Arrest Devices Gloves Welding Gloves / Spats / Goggles / Face Shield During all Site Works a FIRST AIDER MUST be Present
Applicable Standards, Codes of Practice and guidance: <ul style="list-style-type: none"> OH&S Act 2000 OH&S Regulation 2001 Rail Safety Regulation 2003 RailCorp Network Rules & Procedures RailCorp Safety Management System. MSDS for all chemicals and hazardous Substances used on site Working near Overhead Power Lines WorkCover NSW Plant Guide AS/NZS 1891.4 – 2000 “Industrial fall arrest systems and devices – Selection, use and maintenance” AS 4839 portable oxy-fuel gas systems National Code of Practice for Manual Handling [NOHSC:2005] EC14 – Guide to Electrical Workers Safety Equipment AS/NZS1576 1995 Guidelines for scaffolding AS 2550.10 -2006 Cranes, hoists and winches -safe use- Elevating work Platforms AS 2550.5-2002 Cranes, hoists and winches - Safe use - Mobile cranes 	Inspection requirements Nil	Service schedule: Nil	Training/Qualification required: <ul style="list-style-type: none"> Construction Industry Induction RISI (Rail Industry Safety Induction) 	

Bridge Retraining Works

Issue date: 12/10/10

Review date: 14/09/13

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)
 WARNING		<p><i>The Following Precautions Are To Be Undertaken For When Using Hot Works As In Activity 1&3 During Total Fire Bans:</i></p> <ul style="list-style-type: none"> • An Hot Works Permit Must Be Issued Before Work Tasks Are To Be Performed • The Welder Or Other Person In Control Of The Worksite Must Take Reasonable Care To Inspect The Workplace To Identify Potential Fire Hazards • All Fire Hazards Are To Be Removed Prior To Commencing Welding Tasks • Fire Fighting Equipment Must Be On Hand At The Worksite E.G. Water cart, Knapsacks, Fire Extinguishers • (Hot Works In Progress) Warning Signs Are To Be Placed At Appropriate Locations • Hot Work Sms-06-Pr-0329 					
1	Prepare Bridge By Removing Any Handrails Or Walkways Obstructing Transoms	Struck By Moving Plant	B+	Implement exclusion zone. Pilot plant movements if required.	C+	Team Leader Work Group Leader All Staff	SWMS, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Contact With Live O/H Wires	A	Maintain clearances at all times. Isolate power	C+	Qualified Permit Holder QEL29/ME161 Team Leader Work Group Leader	Electrical Equipment SMS-06-GD-0268 Electrical Permits SMS-06-EN-0577
		Fall From Height	B+	Provide scaffold, elevated work platform or wear harness	C+	Team Leader Work Group Leader Workcover Ticketed Operator Sms-11-Gd-0243	SSMP , Pre work Briefing SMS-06-FM-0163 Working at Heights SMS-06-GD-0240 PPE- SMS-06-GD-0323 Lifting Equipment SMS-16-FM-0089
		Head Injuries	C-	Briefing. hard hats must be worn .keep clear if machines operating ,signage	D	Team Leader Work Group Leader All Staff	SWMS, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Personal Injuries	C-	Briefing additional PPE as necessary	D	Team Leader Work Group Leader All Staff	SWMS, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
		Hearing Damage From Plant	C+	Use hydraulic equipment. have silencers fitted to machinery. use PPE use ear protection in close proximity to machine	D	Team Leader Work Group Leader All Staff	SWMS, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323 Noise Management SMS-06-GD-0273
		Damage To Rail Infrastructure	B+	Vigilance/cover to protect infrastructure	C+	Team Leader Work Group Leader All Staff	SSMP , Pre work Briefing SMS-06-FM-0163

Bridge Retraining Works

Issue date: 12/10/10

Review date: 14/09/13

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)
		Struck By Hot Material During Oxy Cutting	B+	Cutting area to be barricaded. Bridge decked out to prevent hot material falling through. Water cart on site due to hot works	C+	Team Leader Work Group Leader All Staff	SWMS, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323 Hot Work SMS-06-PR-0329
2	Removing/Rails	Fall From Height	B+	Wear harness erect barriers if appropriate	C+	Team Leader Work Group Leader All Staff	SSMP , Pre work Briefing SMS-06-FM-0163 Working at Heights SMS-06-GD-0240
		Struck By Rail Fastener	C-	Be aware. Follow correct procedure for removing /installing rail fasteners. Wear safety helmet and eye protection.	D	Team Leader Work Group Leader All Staff	SSMP , Pre work Briefing SMS-06-FM-0163
		Struck By Moving Plant Or Rail	B+	Implement exclusion zone. Pilot plant movements if required.	C+	Team Leader Work Group Leader All Staff Ticketed Operator Sms-11-Gd-0243	SWMS, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
3	Removing Old Transoms And Install New Transoms	Burning Bolts – Burn Injuries	C+	Staff doing hot works to wear appropriate PPE	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Stacking Transoms Once Removed – Sprains/Strains	B-	Use mechanical machinery to stack and remove transoms	C+	Team Leader Work Group Leader All Staff	SSMP , Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
		Boring New Holes In New Transoms – Hand And Leg Injuries	B-	Wear required PPE don't drill or bore with hands and feet in the immediate area of the drill bits	C+	Team Leader Work Group Leader All Staff	SSMP , Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Lifting New Transoms Into Position – Sprains And Strains	B-	Use mechanical machinery to lift and install new transoms	C+	Team Leader Work Group Leader All Staff	SSMP , Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Failure Of Lifting Equipment From Overloading Or Overturning	B+	Competent operators to assess loads carefully prior to lifting. Correct type and size chosen for task	C+	Team Leader Work Group Leader Workcover Ticketed Operator	SSMP, Pre work Briefing SMS-06-FM-0163 Lifting Equipment SMS-16-FM-0089 Plant SMS-06-PR-0225
4	Lowering Running Rails To Install Plates	Fall From Height	B+	Wear harness	C+	Team Leader Work Group Leader All Staff	SSMP , Pre work Briefing SMS-06-FM-0163 Working at Heights SMS-06-GD-0240

Bridge Retraining Works

Issue date: 12/10/10

Review date: 14/09/13

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)
		Manual Handling Injuries	B-	Correct manual handling techniques. Rotate staff on repetitive tasks. Use gloves if required	C+	Team Leader Work Group Leader All Staff	SSMP , Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
		Crushing Hand Or Foot Between Rail And Transom	B+	Position jack on level . Keep hands and feet clear of rail when jacking. Pack securely with hardwood packers. Ensure all staff clear before removing packers and lowering rail.	C+	Team Leader. Work Group Leader. All Staff	SSMP , Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
5	Install New Rail	Sprains, Strains And Crush Injuries	B-	Use bars for final positioning of plates and rail. Keep hands and feet clear. Wear gloves and safety boots.	C+	Team Leader Work Group Leader All Staff	SSMP , Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
		Air Drills	B+	Safety clips to be used on hoses at all times.	C-	Team Leader Work Group Leader All Staff	SWMS, Pre work Briefing SMS-06-FM-0163 Electrical Equipment SMS-06-GD-0268
		Damage To Hearing From Noise	C+	Use hearing protection if required.	D	Team Leader Work Group Leader All Staff	SWMS, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
6	Reinstall Any Handrails Or Walkways Previously removed	Struck By Moving Plant	B+	Implement exclusion zone. Pilot plant movements if required.	C+	Team Leader Work Group Leader All Staff	SWMS, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Contact With Live O/H Wires	A	Power outage or maintain safe clearances	C+	Qualified Permit Holder	Electrical Equipment SMS-06-GD-0268 Electrical Permits SMS-06-EN-0577
		Fall From Height	B+	Provide scaffold, elevated work platform or wear harness	C+	Team Leader Work Group Leader Workcover Ticketed Operator Sms-11-Gd- 0243	SSMP , Pre work Briefing SMS-06-FM-0163 Working at Heights SMS-06-GD-0240 PPE- SMS-06-GD-0323 Lifting Equipment SMS-16-FM-0089
		Head Injuries	C-	Briefing. hard hats must be worn .keep clear if machines operating ,signage	D	Team Leader Work Group Leader All Staff	SWMS, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Personal Injuries	C-	Briefing additional PPE as necessary	D	Team Leader Work Group Leader All Staff	SWMS, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001

Bridge Retraining Works

Issue date: 12/10/10

Review date: 14/09/13

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)
		Hearing Damage From Plant	C+	Use hydraulic equipment. have silencers fitted to machinery. use PPE use ear protection in close proximity to machine	D	Team Leader Work Group Leader All Staff	SWMS, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323 Noise Management SMS-06-GD-0273
		Damage To Rail Infrastructure	B+	Vigilance/cover to protect infrastructure	C+	Team Leader Work Group Leader All Staff	SSMP , Pre work Briefing SMS-06-FM-0163
		Struck By Hot Material During Oxy Cutting	B+	Cutting area to be barricaded. Bridge decked out to prevent hot material falling through . Water cart on site due to hot works	C+	Team Leader Work Group Leader All Staff	SWMS, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323 Hot Work SMS-06-PR-0329

Bridge Retraining Works

Issue date: 12/10/10

Review date: 14/09/13

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

Team member name (Please print)	Team Member signature	Instructor/ Briefer name	Date	Team member name (Please print)	Team Member signature	Instructor/ Briefer name	Date

Bridge Retranching Works

Issue date: 12/10/10

Review date: 14/09/13

RailCorp Level 2 Risk Matrix - Regional & Local (Workplace)			Likelihood/Frequency							<u>Definition for Use - Regional & Local level (Workplace)</u> 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 or 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-		