Rail Adjustment – Track Welding

Issue date: 10/04/08
Review date: 17/02/11

SWMS number:
SMS-06-SW-1044

SWMS Name:
Rail Adjustment – Track Welding

SWMS Team:
Track Review Team

Custodian (Position):
Track Works Manager
Commercial / Renewals

Assumptions:

Site specific risks are addressed and assessed in pre- work briefing

Approving Authority (Position):
Safety and Quality Manager,
Commercial / Renewals

Applicable Standards, Codes of Practice and guidance:

- 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
- Refer to TS3601, RTS3602, TS3602, TS3603 and TS3604.
- Lateral movement of the rail for de-stressing as per RTS3642 and TS3642
- National Code of Practice for Manual Handling [NOHSC:2005]
- AS 4839 portable oxy-fuel gas systems
- AS 1674.1 – Safety in welding processes

Equipment/Plant/Tools:

- Rail tensor
- Oxy / LPG Welding-Cutting Equipment
- Thermit Welding Equipment
- Clippers / handtools
- Tape and Plumbob, Measuring wheel
- Hot Box or Suitable Container

Records/Reporting:

- Worksite Protection Plan
- Pre-work Brief
- Fuel and Hydraulic Oil MSDS
- Daily Plant Checklist
- Weekly Welding Return (TS3650 Appendix 3). Also refer RTS3650.
- Before and after measurement Form No. TS21

Permits/licences required:

- Welder / Cutter Certificate
- Hot Works Permit (During Total Fire Ban)

Inspection requirements
Nil

Service schedule:
Nil

MIMS or METRE Ref:
Nil

Qualification required:

- Construction Industry Induction
- Track Safety Awareness or
- RISI (Rail Industry Safety Induction)

Content reviewed by Technical expert (SME) and RailCorp safety professional
(position including Div/Group)
Track Works Manager & SEQ Coordinator Asset Management Group
Commercial / Renewals

Personal Protective Equipment required:

- Safety Boots
- High Visibility Vests
- Hardhats
- Protective Clothing
- Safety Glasses

And as specified below.

- Gloves
- Welding Gloves / Goggles / Spats
- Dust Masks (as required)
- Hearing protection (as required)

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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	Record existing track alignment	Slips, trips and falls	C+	Pre-work briefs. Take care when walking on track , only as required	D	Team Leader / Work Group Leader	Pre work Briefing SMS-06-FM-0163 Workplace Risk Management SMS-06-PR-0104
2	Mark out adjustment length, preferably either 110m or 220m.	Slips, trips and falls	C+	Take care when working on track only at marking point	D	Team Leader / Work Group Leader	Workplace Risk Management SMS-06-PR-0104
	WARNING	*The Following Precautions are to be undertaken for when using Hot Works as in Activities 3,9, 10, 11, 12 &13 during Total Fire Bans:* • An Hot Works Permit must be Issued before Work tasks are to be Performed • The Rail Thermit 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 Thermit Welding Tasks • Fire Fighting Equipment must be on Hand at the Worksite e.g. Watercart, Knapsacks, Fire Extinguishers • (Hot Works in Progress) Warning Signs are to be placed at Appropriate locations Hot Work SMS-06-PR-0329						
3	Free weld out all joints not required for the adjustment.	Burns Fire	C+	Welders to wear long sleeved shirts, trousers, gloves, goggles, leggings and knee pads. Flint lighters to be used. Staff to keep clear of hot materials. Fire fighting equipment to be present. Staff to comply with G 3623.	C+	Welder & Trades Assistant	PPE SMS-06-GD-0323 Site Incident Response Procedures SMS-15-PR-0245
4	Remove anchors / elastic fastenings.	Hit by flying material	C+	Minimise manual handling. If hammers are being used, place foot on clip / anchor (mechanised method preferred).	D	Work Group	Manual Handling Guide SMS-06-GD-0001 PPE SMS-06-GD-0323
5	Install Rail Tensors	Manual handling	C+	Group lift of tensors	C-	Work Group	Manual Handling Guide SMS-06-GD-0001
6	De-stress rail by vibrating it and set the correct gap.	Jammed body parts, noise	D	Other staff to stand clear. Hearing protection to be worn	D	Work Group	PPE SMS-06-GD-0323

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7	Replace anchors / elastic fastenings.	Hit by flying material	B+	If hammers are being used, place foot on clip / anchor. Mechanised method preferred.	C+	Work Group	Manual Handling Guide SMS-06-GD-0001 PPE SMS-06-GD-0323
8	Pack Mould	Strains and Sprains	C+	Use passing under knees, place equipment as close as possible to work area	D	Welder & Trades Assistant	Manual Handling Guide SMS-06-GD-0001
9	Pre Heat	Burns	C+	No loose hair use head cover, only welder and offsider within 5 metres of pre heat, appropriate	D	Welder & Trades Assistant	PPE SMS-06-GD-0323 Pre work Briefing SMS-06-FM-0163
10	Weld	Burns hit by flying hot metal from reaction in crucible	C+	No loose hair use head cover, only welder and offsider within 5 meters of pre heat other staff more then 5 metres of job.	D	Welder & Trades Assistant	PPE SMS-06-GD-0323 Pre work Briefing SMS-06-FM-0163
11	Strip Down Welds	Burn from welding equipment	C+	Wear gloves and other PPE, place all hot items in a designated area, don't test temperature of equipment with bare hands	C+	Welder & Trades Assistant	PPE SMS-06-GD-0323
12	Clean welds and sheer excess	Hit by flying hot debris	C+	Staff to stand 5 metres clear of site, staff to stand at the back of staff using hot set Place All Excess Hot Metals into a Hot Box or Suitable Container	C+	Welder & Trades Assistant	PPE SMS-06-GD-0323
13	Grind Weld to profile	Hit by sparks from wheel, eye injuries, inhale dust from wheel/dust	C+	Establish 10 metre exclusion zone	D	Work Group	PPE SMS-06-GD-0323
14	After Measurements	Slips, trips and falls	C+	Take care when walking on track, only as required	D	Work Group Leader	Workplace Risk Management SMS-06-PR-0104

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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

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

RailCorp Level 2 Risk Matrix - Regional & Local (Workplace)		Likelihood/Frequency						
		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-

Extreme
High
Medium
Low

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 liklihood 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 matricies).

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.