

Static calibration of load cell weighbridges

Issue date: 17/01/2008

Review date: 17/01/2011

SWMS number: SMS-06-SW-0927	SWMS Name: Static calibration of load cell weighbridges			SWMS Team: <ul style="list-style-type: none">Renato Dovecer – Safety Project OfficerGerry Kan - Manager, Wayside and Train Monitoring SystemsSteve Haggett - Manager, Train Monitoring Systems UnitSaiprasad Kulkarni - Technical SpecialistPhil Clelland- Technical SpecialistPeter Reay - Technical SpecialistEmmanuel Fernandez - Technical Specialist
Custodian (Position): Safety Project Officer	Assumptions: N/A			
Approving Authority (Position): Manager, Wayside and Train Monitoring Systems	Plant/Equipment/Tools: <ul style="list-style-type: none">Hand ToolsPortable GeneratorTest TrolleyTest massesMobile CraneLadder	Records/Reporting: Wayside systems maintenance Risk Assessment	Permits/licences required: <ul style="list-style-type: none">Electrical Permit	
Applicable Standards, Codes of Practice and guidance: <ul style="list-style-type: none">OHS Act 2000OHS Regulation 2001National Code of Practice for Manual Handling [NOHSC: 2005 (1990)]NSW Rail Safety Act 2002Network Rules and Network ProceduresWorkCover NSW Plant GuideWorkCover Code of Practice - Electrical practices for construction workAS 1892.5 Portable ladders – Safe use and careAS/NZS 1891 "Industrial fall arrest systems and devices"AS2550.1 Cranes, hoists and winches – Safe use Part 1: General requirementsAS2550.5 Cranes, Safe Use Part 5 : Mobile Cranes				Inspection requirements <ul style="list-style-type: none">Maintain inspection and test records in accordance with SMS-16-SR-0057 Inspection and Testing and SMS-05-SR-0027 Records Management.Electrical inspecting & tagging – monthlyBefore useCrane: As per manufacturer's instructions, or if not available – 3 months if used 0.5-4 hours per day; 2 months if used 4-16 hours per day.Ladder – Inspected every 6 months.Harnesses & Lanyards – Inspected every 6 months
		MIMS or METRE Ref: N/A		
Content reviewed by Technical expert (SME) and RailCorp safety professional (position including Div/Group) <ul style="list-style-type: none">Manager, Train Monitoring Systems Unit - C&CS, Asset ManagementSafety Project Officer - C&CS, Asset Management				
PPE required: <ul style="list-style-type: none">Safety BootsHigh Visibility VestHard HatSunscreenBroad Brimmed HatProtective Gloves (Cut resistant or Leather)Hearing Protection (Ear muffs or Earplugs)Harnesses & Lanyards				

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1	Apply appropriate worksite protection & access worksite	Struck by train	A	Adhere to worksite protection. PPE: High Visibility Vest	C-	Protection Officer Team Member	SMS-06-GD-0323 Personal Protection Equipment
		1500V OHW Exposure to Electrical Shock	A	Take Power Out Permit for 1500V feed in area if working within 3m of traction voltages. Crane must not be used within 3 metres of live electrical apparatus. Power Out Permit to be held by appropriately qualified person (PO4) prior to elevation of crane Permit to be handed back only after all work completed and crane removed	C-	Protection Officer	SMS-06-EN-0577 Electrical Permits SMS-06-EN-0598 Electrical Permits to Work SMS-06-SW-0272 Working in Accordance with Electrical Permit
		Slips, trips and falls	B-	Awareness of terrain. Plan a clear path of travel; remove any slip, trip hazards. PPE: Safety Boots	C-	Team Member	SMS-06-GD-0323 Personal Protection Equipment
		Exposure to heat/cold (climate)	C+	Reduce exposure by introducing frequent breaks and rotate jobs. Make sure there is access to cool, palatable drinking water.	D	Team Member	
		Exposure to UV Radiation	C+	PPE: Broad Brimmed Hat, Protective Clothing (long sleeves), Sunscreen Reduce exposure by introducing frequent breaks and rotate jobs.	D	Team Member	SMS-06-GD-0323 Personal Protection Equipment
		Fatigue	B+	Ensure fatigue guide lines are undertaken. Reduce exposure by introducing frequent breaks and rotate jobs.	C-	Team Leader Team Member	SMS-20-SR-0169 Health Management
2	Mobile crane setup	Plant (Mobile Crane)	B+	Follow Operators instructions Operator to have relevant qualifications. Plant operator to set up plant on stable ground with stabilisers fully extended.	C-	Team Member	SMS-06-GD-0225 Plant

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3	Unloading of Test Trolley & Generator	Pinch injuries: hooking / unhooking loads	C+	Only suitable instructed personnel to undertake work. Keep hands & body clear of pinching points. PPE: Protective Gloves (Cut resistant or Leather).	D	Team Member	SMS-06-GD-0323 Personal Protection Equipment
		Struck by moving plant & loads	B+	Stay clear & alert of moving loads. If within 6m, hard hat must be worn.	C-	Team Member	SMS-06-GD-0323 Personal Protection Equipment
		Crush injuries	B+	Isolate other employees from area directly beneath. Co-ordinate lifting PPE: Safety Boots, Hard Hat	C-	Team Member	SMS-06-GD-0323 Personal Protection Equipment
		Cuts & abrasions	C+	PPE: Protective Gloves (Cut resistant or Leather). Be aware of sharp edges.	D	Team Member	SMS-06-GD-0323 Personal Protection Equipment
		Manual handling / Muscular strain	B-	Use mechanical aid (crane) for heavy loads. Co-ordinate lifting Follow the correct bending and lifting techniques: keep back straight, elbows in and bend at the knees. Perform all movements smoothly, in a controlled, balanced, comfortable position. Avoid overreaching by working within easy arms reach. Where postures / positions are sustained for long periods, alter your posture or take a break. When turning move your feet rather than twisting.	C-	Team Member	SMS-06-GD-0001 Guide to Manual Handling

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4	Position Test Trolley in centre of weighbridge.	Struck by Test Trolley	B+	Stay clear & alert of moving plant. Test trolley must always be in gear, allowing movements to be controlled at all times. No person shall be on the trolley while in motion.	C-	Team Member	SMS-06-GD-0225 Plant
5	Load test masses onto test trolley	Pinch injuries: hooking / unhooking loads	C+	Only suitable instructed personnel to undertake work. Keep hands & body clear of pinching points. PPE: Protective Gloves (Cut resistant or Leather).	D	Team Member	SMS-06-GD-0323 Personal Protection Equipment
		Struck by moving plant & loads	B+	Stay clear & alert of moving loads. PPE: Hard Hat	C-	Team Member	SMS-06-GD-0323 Personal Protection Equipment
		Crush injuries	B+	Isolate other employees from area directly beneath. Co-ordinate lifting PPE: Safety Boots, Hard Hat	C-	Team Member	SMS-06-GD-0323 Personal Protection Equipment
		Uneven loading of 1 tonne masses on test trolley	B+	Load weights in an even / balanced manner. Ensure the trolley maximum load is not exceeded.	C-	Team Member	

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5	Load test masses onto test trolley (cont.)	Manual handling / Muscular strain	B-	Use mechanical aids (crane) for heavy loads. Co-ordinate lifting Follow the correct bending and lifting techniques: keep back straight, elbows in and bend at the knees. Perform all movements smoothly, in a controlled, balanced, comfortable position. Avoid overreaching by working within easy arms reach. Where postures / positions are sustained for long periods, alter your posture or take a break. When turning move your feet rather than twisting.	C-	Team Member	SMS-06-GD-0001 Guide to Manual Handling
		Fall from heights – test trolley	B+	Use Fall Arrest System (Harness, Lanyards) Use of appropriate anchorage point. All persons using the device have received training in the selection, assembly and use of the system. Adequate provision is made for the rescue of a person whose fall is arrested by a fall arrest device.	C-	Team Member	SMS-06-GD-0240 Working At Heights SMS-06-GD-0241 Fall Arrest Systems SMS-06-SW-0260 Fall Arrest Systems (Harnesses, Lanyards and Attachment Hardware)
		Fall from heights – Accessing / Exiting loaded test trolley	B+	Ladder to be placed against loaded weights on level and solid ground. Ladder should be held firmly and footed, while personnel are accessing ladder. Climb and descend facing the ladder maintaining three points of contact with the hands gripping the stiles or each rung.	C-	Team Member	SMS-06-GD-0240 Working At Heights SMS-06-SW-0264 Portable Ladders, Step Ladders and Step Platforms

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6	Connect generator to the test trolley to enable it to be moved.	Slips, trips & falls – generator to test trolley cable	B-	Inform worksite personnel of cable placement. Have a lookout watching cable during trolley movements. PPE: Safety Boots	C-	Team Member	SMS-06-GD-0323 Personal Protection Equipment
		Contact with electricity	A	Electrical equipment tested and tagged. Do not operate equipment in damp or wet locations.	C-	Team Member	SMS-06-GD-0268 Working Around Electrical Equipment SMS-06-SW-0482 Portable Generators
		Exposure to fumes (Portable generator)	C+	Make sure adequate ventilation. Never use a generator indoors or in enclosed spaces.	D	Team Member	SMS-06-GD-0225 Plant SMS-06-SW-0482 Portable Generators
		Noise	C+	PPE: Hearing Protection (Ear muffs or Earplugs) Keep portable generators as far as possible from work areas and gathering spaces.	D	Team Member	SMS-06-GD-0273 Noise Management SMS-06-GD-0323 Personal Protection Equipment SMS-06-SW-0482 Portable Generators
7	Moving loaded test trolley: a) Either end of weighbridge b) Moving on & off weighbridge when adjusting c) Return to centre position	Struck by Test Trolley	B+	Stay clear & alert of moving plant. Test trolley must always be in gear, allowing movements to be controlled at all times. No person shall be on the trolley while in motion.	C-	Team Member	SMS-06-GD-0225 Plant
		Fall from heights	B+	No person shall be on the trolley while in motion.	C-	Team Member	SMS-06-GD-0240 Working At Heights

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8	Continue loading test masses (once returned to the centre position).	Pinch injuries: hooking / unhooking loads	C+	Only suitable instructed personnel to undertake work. Keep hands & body clear of pinching points. PPE: Protective Gloves (Cut resistant or Leather).	D	Team Member	SMS-06-GD-0323 Personal Protection Equipment
		Struck by moving plant & loads	B+	Stay clear & alert of moving loads. PPE: Hard Hat	C-	Team Member	SMS-06-GD-0323 Personal Protection Equipment
		Crush injuries	B+	Isolate other employees from area directly beneath. Co-ordinate lifting PPE: Safety Boots, Hard Hats	C-	Team Member	SMS-06-GD-0323 Personal Protection Equipment
		Uneven loading of 1 tonne masses on test trolley	B+	Load weights in an even / balanced manner. Ensure the trolley maximum load is not exceeded.	C-	Team Member	
		Manual handling / Muscular strain	B-	Use mechanical aids (crane) for heavy loads. Co-ordinate lifting Follow the correct bending and lifting techniques: keep back straight, elbows in and bend at the knees. Perform all movements smoothly, in a controlled, balanced, comfortable position. Avoid overreaching by working within easy arms reach. Where postures / positions are sustained for long periods, alter your posture or take a break. When turning move your feet rather than twisting.	C-	Team Member	SMS-06-GD-0001 Guide to Manual Handling

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8	Continue loading test masses (once returned to the centre position). (cont.)	Fall from heights – test trolley	B+	Use Fall Arrest System (Harness, Lanyards) Use of appropriate anchorage point. All persons using the device have received training in the selection, assembly and use of the system. Adequate provision is made for the rescue of a person whose fall is arrested by a fall arrest device.	C-	Team Member	SMS-06-GD-0240 Working At Heights SMS-06-GD-0241 Fall Arrest Systems SMS-06-SW-0260 Fall Arrest Systems (Harnesses, Lanyards and Attachment Hardware)
		Fall from heights – Accessing / Exiting loaded test trolley	B+	Ladder to be placed against loaded weights on level and solid ground. Ladder should be held firmly and footed, while personnel are accessing ladder. Climb and descend facing the ladder maintaining three points of contact with the hands gripping the stiles or each rung.	C-	Team Member	SMS-06-GD-0240 Working At Heights SMS-06-SW-0264 Portable Ladders, Step Ladders and Step Platforms
9	Moving fully loaded test trolley: a) Either end of weighbridge b) Moving on & off weighbridge when adjusting c) Return to centre position	Struck by Test Trolley	B+	Stay clear & alert of moving plant. Test trolley must always be in gear, allowing movements to be controlled at all times. No person shall be on the trolley while in motion.	C-	Team Member	SMS-06-GD-0225 Plant
		Fall from heights	B+	No person shall be on the trolley while in motion.	C-	Team Member	SMS-06-GD-0240 Working At Heights
10	Calibrate weighbridge completed					Team Member	
11	Unload test masses	Pinch injuries: hooking / unhooking loads	C+	Only suitable instructed personnel to undertake work. Keep hands & body clear of pinching points. PPE: Protective Gloves (Cut resistant or Leather).	D	Team Member	SMS-06-GD-0323 Personal Protection Equipment

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11	Unload test masses (cont.)	Struck by moving plant & loads	B+	Stay clear & alert of moving loads. PPE: Hard Hat	C-	Team Member	SMS-06-GD-0323 Personal Protection Equipment
		Crush injuries	B+	Isolate other employees from area directly beneath. Co-ordinate lifting PPE: Safety Boots, Hard Hats	C-	Team Member	SMS-06-GD-0323 Personal Protection Equipment
		Uneven loading of 1 tonne masses on test trolley	B+	Load weights in an even / balanced manner. Ensure the trolley maximum load is not exceeded.	C-	Team Member	
		Manual handling / Muscular strain	B-	Use mechanical aids (crane) for heavy loads. Co-ordinate lifting Follow the correct bending and lifting techniques: keep back straight, elbows in and bend at the knees. Perform all movements smoothly, in a controlled, balanced, comfortable position. Avoid overreaching by working within easy arms reach. Where postures / positions are sustained for long periods, alter your posture or take a break. When turning move your feet rather than twisting.	C-	Team Member	SMS-06-GD-0001 Guide to Manual Handling

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		Fall from heights – Accessing / Exiting loaded test trolley	B+	Ladder to be placed against loaded weights on level and solid ground. Ladder should be held firmly and footed, while personnel are accessing ladder. Climb and descend facing the ladder maintaining three points of contact with the hands gripping the stiles or each rung.	C-	Team Member	SMS-06-GD-0240 Working At Heights SMS-06-SW-0264 Portable Ladders, Step Ladders and Step Platforms
12	Load test trolley & generator onto truck.	Struck by Test Trolley	B+	Stay clear & alert of moving plant. Test trolley must always be in gear, allowing movements to be controlled at all times. No person shall be on the trolley while in motion.	C-	Team Member	SMS-06-GD-0225 Plant
		Pinch injuries: hooking / unhooking loads	C+	Only suitable instructed personnel to undertake work. Keep hands & body clear of pinching points. PPE: Protective Gloves (Cut resistant or Leather).	D	Team Member	SMS-06-GD-0323 Personal Protection Equipment
		Struck by moving plant & loads	B+	Stay clear & alert of moving loads. PPE: Hard Hat	C-	Team Member	SMS-06-GD-0323 Personal Protection Equipment

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12	Load test trolley & generator onto truck. (cont.)	Crush injuries	B+	Isolate other employees from area directly beneath. Co-ordinate lifting PPE: Safety Boots, Hard Hats	C-	Team Member	SMS-06-GD-0323 Personal Protection Equipment
		Cuts & abrasions	B+	PPE: Protective Gloves (Cut resistant or Leather). Be aware of sharp edges.	C-	Team Member	SMS-06-GD-0323 Personal Protection Equipment
		Manual handling / Muscular strain	B-	Use mechanical aids (crane) for heavy loads. Co-ordinate lifting Follow the correct bending and lifting techniques: keep back straight, elbows in and bend at the knees. Perform all movements smoothly, in a controlled, balanced, comfortable position. Avoid overreaching by working within easy arms reach. Where postures / positions are sustained for long periods, alter your posture or take a break. When turning move your feet rather than twisting.	C-	Team Member	SMS-06-GD-0001 Guide to Manual Handling
13	Vacate worksite and remove worksite protection	Struck by train	A	Adhere to worksite protection. Protection Officer to escort contractors and workers from worksite. PPE: High Visibility Vest	C-	Protection Officer Team Member	SMS-06-GD-0323 Personal Protection Equipment
		Slips, trips and falls	B-	Awareness of terrain. Plan a clear path of travel; remove any slip, trip hazards. PPE: Safety Boots	C-	Team Member	SMS-06-GD-0323 Personal Protection Equipment

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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

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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-	

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 or risks and/or where the controls may be different. It may be useful to score the risk more than once.