# Rail Inspection Ultrasonic Rail Testing with Vehicle



**SWMS number:**

SMS-06-SW-1115

**SWMS Name:**

Rail Inspection Ultrasonic Rail Testing with Vehicle

**SWMS Team:**
John Casey,
Graeme Penny,
Cynthia Lee

**Custodian (Position):**
Manager Rail Inspection

**Assumptions:**
Task undertaken day or night, in various weather conditions with Hired Vehicle & its Car Driver external to RailCorp, Protection Officer with Level 2 Rail Safety Competency is provided each run. Job planning will include enough time to do flaw detection.

**Content reviewed by Technical expert (SME) and RailCorp safety professional** (position including Div/Group)
Maurizio Di Bartolomeo, Manager, Network Monitoring

**Approving Authority (Position):**
Manager Network Inspection

**Plant/Equipment/Tools:**
- Ultrasonic Flaw Detector
- Train Working Radio
- Communication tool-mobile phone
- Signal Circuit phone

**Records/Reporting:**
- Contractor Car Site Safety Manual Book
- SMS-06-FM-0163 Pre Work Briefing
- SMS-06-FM-0774 Worksite Protection Plan
- Contractor Maintenance Records Rolling Stock Guideline

**Permits/licences required:**
NA

**Applicable Standards, Codes of Practice and guidance:**
- OHS Act & Regulation,
- Rail Safety Act & Regulation
- Network Rules & Procedure
- TMC 224 Rail Defects & Testings
- TMC 226 Rail Defects Handbooks
- Contractor Car Operation Manual
- National Code of Practice: Manual Handling

**Inspection requirements**
- As per TMC 224 and TMC 226

**Service schedule:**
N/A

**MIMS or METRE Ref:**
INL00615

**Training/Qualifications required:**
- Rail Safety Competency Level 2
- Basic First Aid Certificate

**PPE required:**
- Safety Boots
- High Visibility Vests
- Hard Hat
- Protective Clothing,
- General Purpose Goggles
- Gloves
- Sun Screen Protection,

PPE Guide SMS-06-GD-0323

| 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 | Get on Contractor Car to get on track | Car driver or Protection Officer not focusing or not understanding on information | C+ | Clear Pre-Work Briefing and Local Safety Induction to All persons on board Contractor Car from Protection Officer before run starts | D | Protection Officer<br>Contractor Car Driver<br>Technical Officer | SMS-06-FM-0163 Pre-Work Briefing |
| | | Trips and falls | C+ | Adequate lighting<br>Wear safety boots | D | Technical Officer | SMS-06-GD-0323 PPE Guide |
| | | Strain muscle when climbing up and down steps | C+ | Climb up and down hands free and with three points contact ` | D | Technical Officer | SMS-06-GD-0001 Guide to Manual Handling |
| 2 | Running of Contractor Car for Rail Testing | Collision with train, people or vehicle | A | Ensure track access clear<br>Continual clear communications with signal box<br>Refer to Network Rules and Procedures | C+ | Contractor Car Driver | Network Rules & Procedures: Block Work / TOA<br>SMS-06-FM-0163 Pre-Work Briefing |
| 3 | Recording of rail testing –<br>Get out of Contractor Car to do hand testing carrying Ultrasonic Flaw Detector | Hit by train or rail vehicle | A | Correct worksite protection with relevant safety protection from Protection Officer<br>Use look-out for hand testers<br>Conduct assessment of hazardous location and Network Communication<br>Ensure Back Up communication system works with pre work testing<br>Contractor Car regular services monthly and maintenance 3 monthly | C- | Technical Officer<br>Protection Officer<br>Contractor Car Driver | SMS-06-FM-0163 Pre-Work Briefing<br>SMS-06-FM-0774 Worksite Protection Plan |

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|---|---|---|---|---|---|---|---|
| | | Back strain from bending down with Flaw Detector | C+ | Ensure Technical Officers are trained in manual handling techniques with yearly revision<br>Bend with knees keeping back straight when holding Flaw Detector | D | Technical Officer | SMS-06-GD-0001 Guide to Manual Handling |
| | | Needle Stick Injury | C+ | Check site before entering<br>Do not place hands when not clearly seen<br>Follow instruction SMS-06-SW-0405 Handling Sharp<br>Place remove needles into yellow sharp container before continue to work | D | “ | SMS-06-SW-0405 Handling Sharps |
| | | Snake and insect bites | C+ | Identify locations of high risk: long grass, near culverts and dams, under rocks, sleepers and burrows, check before enter. Do not enter if not seen clearly<br>Safety gloves | D | Technical Officer | SMS-06-FM-0163 Pre-Work Briefing |
| | | Strains and sprains from pulling up and down of own body weight | C+ | Climb up and down in timely manner hands free | D | Technical Officer | SMS-06-GD-0001 Guide to Manual Handling |
| | | Contractor Car or Equipment break down eg. Computer malfunction | C+ | Ensure Contractor Car Services & Maintenance Records are up to date | D | Car driver | Contractor Car Operating Procedure |
| 4 | After recording Ultrasonic reading:<br>Report to Protection Officer to leave site when finished | Hand or finger injury | C+ | Plan job with enough time to do flaw detection<br>Person In Charge informed Protection Officer/Signal Box before leaving site | D | Technical Officer | SMS-06-FM-0163 Pre-Work Briefing<br>SMS-06-GD- |

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|---|---|---|---|---|---|---|---|
| | | Strain muscle when climbing up and down steps | C+ | Climb up and down hands free and three points contact | D | Technical Officer | 0001 Guide to Manual Handling |
| 5 | Car return to site | Hazards as Step 1 | A | Controls as Step 1 | C+ | Contractor Car Driver | As step 1 |
| 6 | Get off Car | Hazards as Step 1 | C+ | Controls as Step 1 | D | Protection Officer<br>Contractor Car Driver<br>Technical Officer | SMS-06-FM-0163 Pre-Work Briefing |

**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- |

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.