Risk Assessment - Management of in-track rail defects

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Management of in-track rail defects

Type	Hazard Cause	Persons Affected	Control Measures	L S T Overall	Additional Control Measures	L S T Overall	Owner/Action
Health and Safety	Derailment from fractured/broken rail awaiting removal causing injury to passengers or staff or damage to lineside structures Rail defect causes derailment	Everyone	1) CRITICAL - Engineering: Line speed is low - Effective 2) CRITICAL - Engineering: Railway is single line - Effective 3) CRITICAL - Engineering: Passenger rolling stock is fitted with buckeye couplings with restricts sideways movement. - Effective 4) Engineering: One side of a derailed bogie would be restrained by the running rail - Effective 5) CRITICAL - Engineering: Seriouis defects not allowed to remain within 20 metres of over-line structures. - Effective 6) CRITICAL - Engineering: Defects are clamped by a system of prioritisation - Effective 7) CRITICAL - Engineering: Carriage corners are strengthened to withstand corner impact as a part of the vehicle integrity, - Effective 8) Engineering: Bridge construction would restrain a low speed breach. - Effective 9) CRITICAL - Engineering: Track ballast would substantially reduce wheel rotation - Effective 10) Administrative: Passengers are seated on the train - Effective	2 x 3 = 6 Medium - Risk to be minimised and controlled so far as is reasonably practical.	None	n n n	n/a

Type	Hazard Cause	Persons Affected	Control Measures	L S T Overall	Additional Control Measures	L S T Overall	Owner/Action
Health and Safety	Undetected latent defect Derailment caused by undetected issues	Everyone	1) CRITICAL - Engineering: All of the running line has been subject to non-destructive URFD inspection during 2021 by Sperry which is on the Network Rail approved list of suppliers and undertakes mainline testing using on-track rail flaw monitoring. - Effective 2) CRITICAL - Engineering: Rail has been assessed as free from latent defects unless as reported otherwise. - Effective 3) CRITICAL - Engineering: All running rail will be subject to on-going annual non-destructive URFD in future. - Effective 4) CRITICAL - Engineering: Sperry test sections of rail for detectable latent defects using Network Rail approved testing equipment and processes used internationally. - Effective 5) CRITICAL - Engineering: Testing equipment is subject to QA based inspection and calibration. - Effective 6) CRITICAL - Engineering: NR Cat 5 line maintenance standards are based on a calculated Equivalent Million Gross Tonnes Per Annum (EGMTPA) of 2.5M tonnes. GWSR estimated EGMTPA is 0.28M tonnes. e.g. 10% of Cat 5 line. - Effective 7) CRITICAL - Engineering: Immediate or 7 day defects are clamped and subject to 5/20 mph emergency speed restriction in accordance with the requirements of the GWSR Track Maintenance Manual. - Effective 8) CRITICAL - Administrative: Sperry is an approved supplier under the Railway Industry Supplier Qualification Scheme - RISQS. - Effective 9) CRITICAL - Administrative: Personnel are trained and deemed competent under company CMS. - Effective 10) CRITICAL - Administrative: Sperry SMS and CMS are regularly audited by Network Rail and other major infrastructure organisations in accordance with Supplier Accreditation (RISQS). - Effective 11) CRITICAL - Administrative: Defect categorisation is underpinned and supported by long-term industry experience and scientific research. - Effective 12) CRITICAL - Administrative: Defects detected are graded according to nature and extent of defect based on Network Rail research and ranking protocols. - Effective 13) CRITICAL - Administrative: High risk failure defects are specially identified as immediate or 7 day defects. - Effective	2 x 3 = 6 Medium - Risk to be minimised and controlled so far as is reasonably practical.	None	n n n	n/a
Health and Safety	Extension of Sperry Action Timescales GWSR doesn't have resources to remediate all issues within required timescales	Everyone	1) CRITICAL - Engineering: Defects detected are graded according to nature and extent of defect based upon NR research and assessment ranking protocols. - Effective 2) CRITICAL - Engineering: NR Cat 5 line maintenance standards are based on an EGMTPA of 2.5M tonnes, GWSR loading is 0.28M tonnes. (10%) - Effective 3) CRITICAL - Engineering: NR assume axle loadings of 25.5 tonnes. GWSR loading is 23.5 tonnes maximum for a loco and 9 tonnes for a carriage.. - Effective 4) CRITICAL - Engineering: High Risk rated defects are removed within the timescales. - Effective 5) CRITICAL - Engineering: Defects are inspected on a regular basis by trained personnel to detect any visible signs of deterioration. e.g. cracks or loss of section. - Effective 6) CRITICAL - Administrative: Risk of failure is assumed to be 25% of NR risk hence remedial action is assumed doubled (increased by a factor of 2) based on engineering judgement. - Effective 7) CRITICAL - Administrative: GWSR line speed is low at a maximum of 25mph. - Effective	2 x 3 = 6 Medium - Risk to be minimised and controlled so far as is reasonably practical.	None	n n n	n/a

COSHH Assessments

There are no COSHH assessments associated with this risk assessment.

Reference Documents

• Management of in-track rail defects - Original risk assessment document before conversion to GWSR format. Contains all of the logic and justification of the defect time extension processes and controls.
• Track Maintenance Manual (FULL) -

Ends