

Safety Implications of Reactive Works in the Railway Industry

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Introduction

- Reactive works are a crucial aspect that affects both preserving operational efficiency and the safety of railway workers and passengers
- Even with thorough safety regulations and advancing technologies, reactive works occur all the time and are a constant threat to the safety of railway workers and passengers.
- Despite known hazards, reactive practices are still common due to budget constraints, operational pressures, and resource shortages.

Aims / Objectives

- To assess the safety implications of reactive works
- To explore why these implications occur.
- To recommend practical strategies to shift toward safer, preventative works

Literature Review

- Reactive work is more dangerous due to time pressure, unpredictability, and lack of preparation.
- Key reports (e.g., Network Rail 2022, RSSB 2021) link reactive works to increased incident rates.
- Barriers to change include cost, resource limitations, and organisational culture.
- Human factors (e.g., stress, fatigue, rushed decisions) increase safety implications during reactive works.

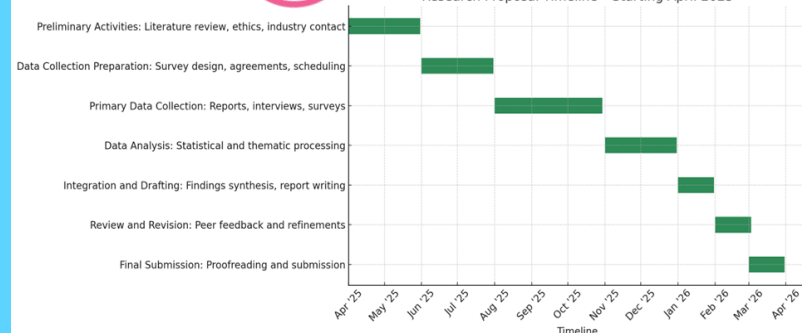
Research Gaps Addressed

- Lack of UK-specific data linking reactive works to safety incidents.
- Need for worker-based qualitative insights, especially in Wales and the North of England.
- Limited exploration of organisational culture and behavioural drivers behind reactive practices.

Timeline



Research Proposal Timeline - Starting April 2025



Research Design & Methodology

Data Collection:

- Quantitative: Analysis of 5 years of incident reports from ORR, RSSB, and Network Rail.
- Qualitative: Structured interviews and an anonymous online questionnaire targeting 100–200 railway workers.

Sampling:

- Purposive sampling of staff with 3+ years' experience.
- Diversity across job roles and locations

Data Analysis:

- Quantitative: Statistical tools (regression, comparison).
- Qualitative: Thematic analysis using anonymised transcripts.

Ethical Considerations:

- Informed consent, confidentiality, secure data storage, and voluntary participation.

Expected Outcomes

- Identify high-risk factors in reactive works.
- Highlight organisational behaviours influencing unsafe practices
- Show statistical evidence linking reactive works to safety incidents.
- Recommend specific changes to maintenance strategies, training, and regulations.

Conclusion

- Reactive works pose substantial safety risks.
- The research aims to combine statistical data with real-world worker experiences.
- Findings will offer practical recommendations for shifting to safer, preventative approaches.

References

- Network Rail (2022)
- RSSB (2021)
- HSE (2019)
- ORR (2022)
- Reason, J. (2016)



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