Shared Learning

The Thameslink Programme Issue Date: 5th January 2018 - For further info contact mike.netherton@networkrail.co.uk

Issue Number: TLP082 **Title:** Flashover During Tandem Lifting Operation

Overview of Event:
A track team tasked with moving lengths of rail next, to an out of use line, near London Bridge Station were utilising two Road Rail Vehicles (RRV's) fitted with lifting chain attachments, to tandem lift a 60ft length of rail which had been left adjacent to the track.

During the task the Crane Controller directed the Machine Operator to lower the machine's jib for the lift, and as the chain attached to the jib came into contact with the rail, it created an electrical circuit (return path through the machine to the running rail) causing an arc and flashover.

The Crane Controller who was in the process of attaching the chains to the rail as part of the tandem lift suffered suspected arc eye from the flashover and was shaken by the incident.

The loose rail which had been stored on the sleeper ends had vibrated onto the ballast and had compromised the sheathing of an energised traction cable sitting on the ballast.

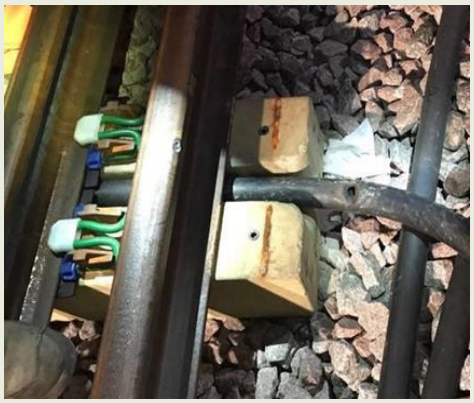
General Key Messages:
- Detailed site surveys should be carried out prior to storing rail in 'out of use' areas as operational cables may be present.
- Due consideration and robust planning should be made when storing materials/equipment in the railway environment.
- As part of planning, operational cables should be identified and marked accordingly.

Causes:

Immediate Cause – Metallic object coming into contact with an energised conductor.

Root and Underlying Causes
- The timely removal of redundant materials following completion of work.
- The sub-station DC circuit breaker had tripped several times over previous days, suggesting that there was a short circuit in the local area.
- As rail was stored on sleeper ends for a prolonged period, it appears that it vibrated off over a 52 hr possession due to vibration compounded by minimal ballast between the sleepers and the track not being bedded in.
- The Work Package Plan was written before new DC cables were energised and did not assess the risk associated with the DC or signal cables adequately.
- The Task Briefing Sheet and Lift Plan was generic and did not mention the use of a Road Rail Vehicle or specific details of the lifting arrangements.
- The removal of the rails had been planned on two prior occasions but due to delays and lack of planning for future works this had been curtailed.

Photo of Event :



Actions Taken As a Result of the Investigations:

- Review of the process around producing Lifting Plans.
- Implementation of enhanced audit checks for Task Briefing Sheet relevance/quality.
- Examine the protocol around sharing information between Network Rail and the project team on operational issues, such as electrical trips.
- Enhanced protection and controls around working in proximity to DC feeder cables, to be agreed briefed and implemented.
- Carry out first aid needs assessment to ascertain if the first aid provisions and training are suitable and sufficient for the work carried out.