SAFETY WEBINAR

Objects left on the Line

Innovative Solutions
Darryl Hopper, RSSB
## Overview

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About Geofencing Technology
Providing total visibility of all Worksite Marker Boards. Allowing the ES and ES support to have 100% confirmation that they have placed their protection in the correct location.

The technology is able to confirm locations of possession support staff and display ELR, Miles, Chains, Yards of all assets on the network.

Incorrectly placing objects on the line
Incorrectly placing objects on the line
Leaving Objects on the Line

- Line clear verification
- Asset placement
- Live location
- Dashboard notifications
Task:
We are seeking solutions to optimise the performance of ALO whilst maintaining safety.

Definition:
In the UK ALO refers to Any Line Open working meaning that train traffic is able to pass whilst infrastructure work is happening.
UIC catch up

2023-11-02 08:42 UTC

Recorded by Darryl Hopper
Organized by Darryl Hopper
Train Protection and Warning System – Continuous Supervision (TPWS-CS)

By interfacing a geospatial positioning system to the existing Class B system (TPWS) – a continuous supervision of the train is enabled without requiring trackside assets.

Enables geofencing of areas of interest, e.g. possessions or objects on track, and applying movement rules / restrictions to automatically stop trains entering.

- Running Sensor Fusion Algorithm (SFA)
- Utilises digital map + predictive algorithms to provide high accuracy safe position
- SIL2 target
- Minimal retrofit effort

TSRs/ESRs
Accept and supervise against both temporary and emergency speed restrictions. Configurable to be with or without a driver interface to provide the opportunity to minimise business change or maximise benefits.

Possession Protection

Through provision of an interface to either local signallers or the Person In Charge of Possession (PICOP), TPWS-CS can provide the ability to geofence possessions to ensure all fitted trains cannot enter possessions without permission.
Hitachi Trackside Guardian
Runaways becoming objects on the line
Human Factors and technology – WAD v WAI

Figure 18: The train and hand trolley after the collision at the station (courtesy of Network Rail).

Figure 19: The train once stopped and the handle from the hand trolley wedged under it (courtesy of Network Rail).

Figure 20: Work-as-Imagined, Work-as-Disclosed, Work-as-Done, Work-as-Prescribed (courtesy of Network Rail).

Engineering Possession (Jan 2023)
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**onwave**
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**THALES**
- Building a future we can all trust

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THANK YOU FOR YOUR PARTICIPATION!