

What is the situation? Trespass on the rail network is a key generator of both primary and reactionary lost minutes which negatively impacts upon railway operations. In 2018/19, the total performance delay costs associated with trespass and vandalism amounted to £55m.

What is the challenge?

Reducing anti-social behaviour which affects railway operations and causes delayed minutes and associated costs.

Detailed disruption data indicates that:

- Trespass disruption has increased significantly for the last 6 years
- Trespass disruption accounts for 42.4% of the total lost minutes for all disruption categories



Example trespass hotspot locations only. Data from 2017-19.

Why is it a challenge?

There are 13,500 incidents on the railway each year, affecting over 400 trains each day. There are various factors influencing why people trespass – please see the details in the analysis of cases section below. It should be noted that 70% of the XA trespass occurs within 100 metres of a train station. There are several measures to combat trespass but relatively few are new. Some fresh thinking is therefore required. Trespass incidents have increased over the last 5 years, as shown in the hot spot map. The challenge is to address the causes of disruption, minimising the effects on the railway operations and to obtain a lasting improvement using innovative and technological improvements.

| Incident reason code | Title | Disruption per year (av 2011 - 2016) |
|----------------------|--|--------------------------------------|
| VA | Disorder/drunks or trespass | 144,176 lost mins |
| VB | Vandalism or theft | 274,435 lost mins |
| XR | Cable vandalism or theft | 132,190 mins |
| XB | Vandalism or theft (including the placing of objects on the line) | 110,491 mins |
| VC | Fatalities and or injuries sustained on platform result of struck by train or falling from a train | 23,140 lost mins |
| XA | Trespass | 380,861 lost mins |
| XC | Fatalities or injuries caused by being hit by train | 426,427 lost mins |
| XD | Level Crossing Incidents including misuse | 61,378 lost mins |

Priority problems

Specific priority problems

- Rail passengers are committing trespass to evade ticket blockades.
- Groups of youths are committing trespass offences in the spring/summer at high impact disruption locations in line with Bank and school holidays.
- Trespass-related disruption events include suicidal trespassers or failed suicide attempts.
- Alcohol and travel fraud are significant contributing factors towards railway disruption.
- Identifying the exact location and details of a trespass can be problematic. Clear location and causal data is often hard to ascertain due to quality and delays in submitting reports.

Related goals

- Saving lives and maintaining the wellbeing of social systems which are disrupted when lives are lost.
- Improving the safety of railway operations.
- Addressing causal issues of anti-social behaviour which have wider negative social effects than the efficient running of the railway system.
- Improvement in reporting allows for better data analysis and improvement in identifications of related crime trends.

Benefits

- Cost savings to the taxpayer via minimising delay compensation costs.
- Performance benefits due to reduced trespass delay minutes.
- Improved passenger satisfaction.
- Safety and wellbeing benefit for public, passenger and railway workers.
- Improved social stability due to reduction in anti-social behaviour.
- Improving Network Rail's reputation as a responsible and caring business.

Specific research needs

To address these challenges, and gain the associated benefits, it is expected that R&D actions will need to address the following aspects:

- Existing or newly developed technologies (e.g. trembler alarms and motion-activated cameras) could be utilised to target specific hot spot trespass locations.
- Improvements in technologies with particular emphasis on solutions for Hot Spots and station platform ends.
- Developing solutions to address trespass that occurs along the lineside or in remote areas such as footpaths crossing the railway.
- Developing technology solutions which effectively prevent anti-social behaviour or its effects.



fig. 1 Level crossing misuse.



fig. 2 Graffiti.

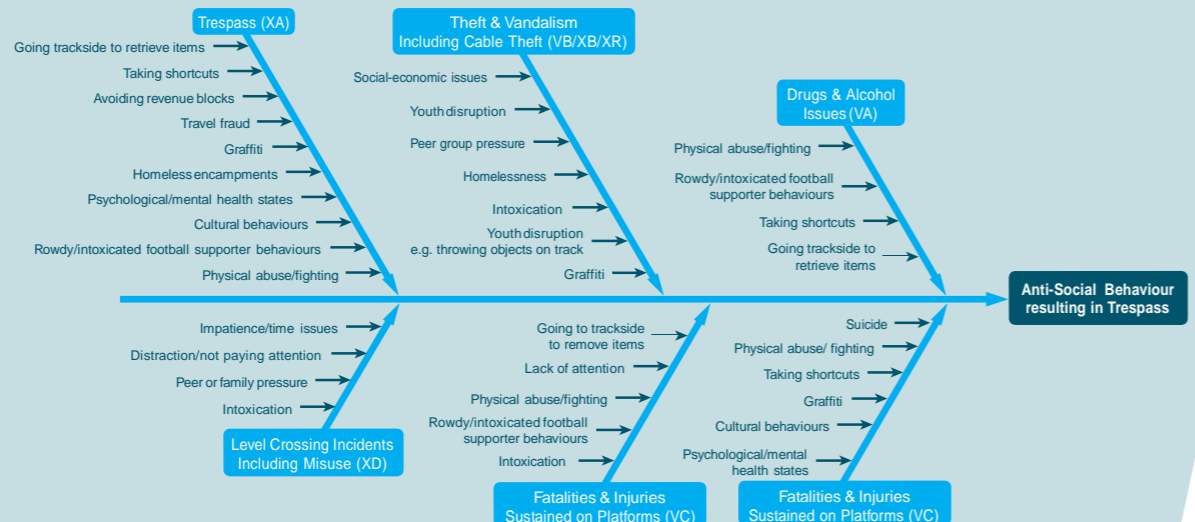


fig. 3 Drugs and alcohol issues.



fig. 4 Suicide intervention.

Analysis of causes



There is an important need to not only tailor solutions to problems at a local level but for those solutions to be future proofed and sustainable.